# The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

VOL. 27. NO. 24. TULSA, OKLAHOMA, NOVEMBER 1, 1928


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Refinery Section Starts on Page 118

# High Gravity Production Trend Down

**Highest daily average estimated total production in 1927, week ended July 30, 2,587,105 bbls. Lowest in 1927, Jan. 22, 2,360,789 bbls.**

## Producers Reluctant to Dispose of This Quality Crude at Present Prices. Operators More Optimistic as to Outlook

By Andrew M. Rowley

**Highest daily average estimated light oil production in 1927, week ended July 30, 2,102,385 bbls. Lowest in 1927, Jan. 1, 1,790,729 bbls.**

Further decreases in the production of light oil with prospects the output of the high gravity sweet oil areas in the Mid-Continent will continue to decline during the remainder of this year at least, have given additional strength to the crude oil market. With the production trend downward, owners of this quality of crude are more reluctant than ever to part with it under present posted prices. Companies looking forward to future requirements realize this situation and the belief is growing the law of supply and demand will force a readjustment upward in the crude oil price schedule.

Should the Mid-Continent area experience any real cold weather this winter, it is believed the resultant decrease in production may be sharper than during previous years owing to the more extensive use of the air and gas lift methods in producing the crude and the consequent greater amount of equipment subject to action by the elements. Considering the season of the year, there is not much crude going to storage in Oklahoma and Kansas and the demand on the part of the refiners is holding up exceptionally well.

Oil men are considerably more optimistic regarding the future. They feel the various movements undertaken to produce crude in an economic manner and avoid wasteful overproduction have done an immense amount of good and that the industry as a whole is in better shape now to solve its problems than ever before. With the decline in production of the type of crude most in demand and the greatly increased cost of exploration for new areas and the testing of these areas by deep drilling, it is felt the time is near at hand when these facts will warrant the major purchasing companies in announcing higher prices.

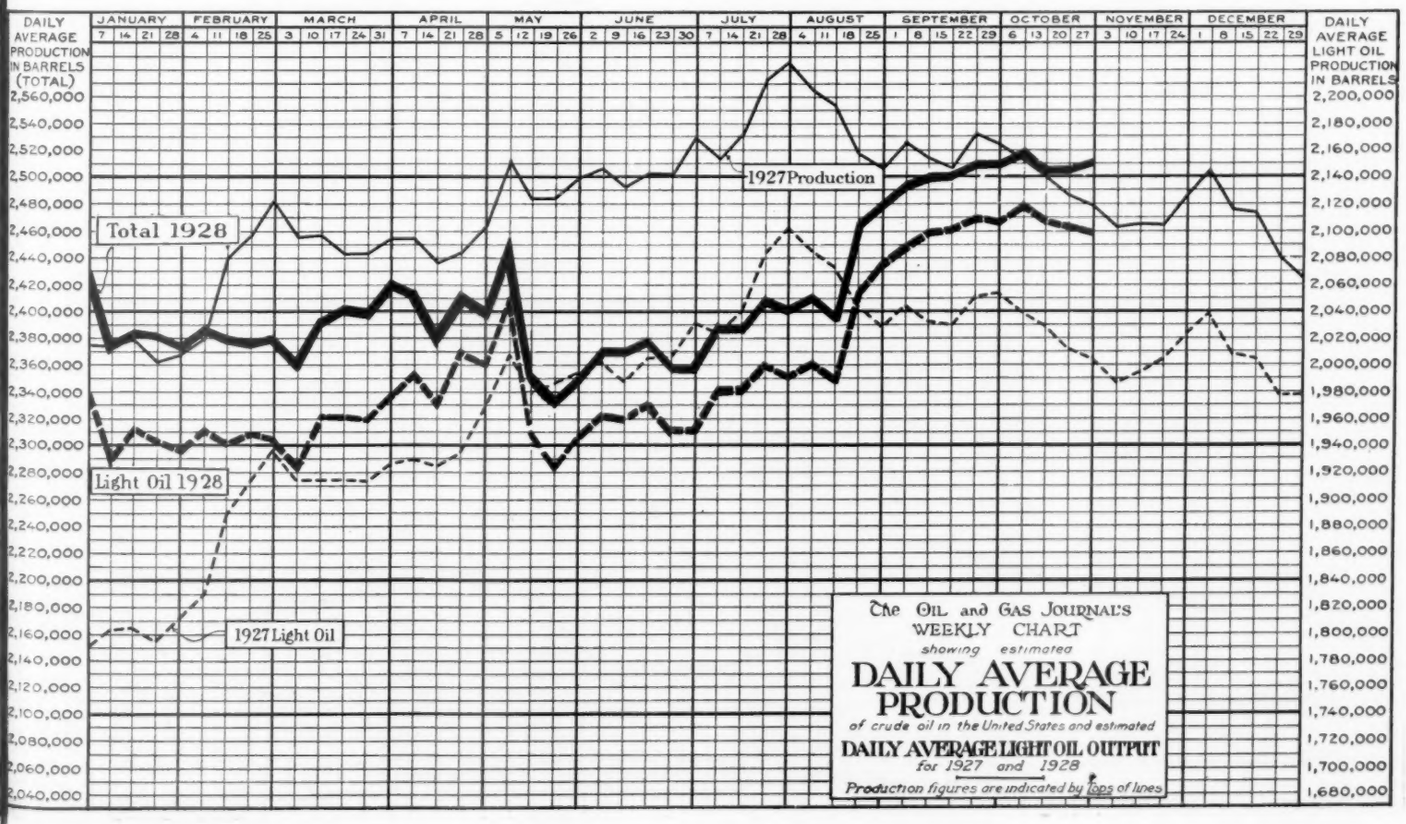
Operators in California are giving careful consideration to the problems confronting them and indications at this time are the situation there will be kept in hand and an overproduction condition which wrought such harm in 1923 and 1924 will be avoided.

## PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended October 27, and a comparison with the previous week follows:

| | Oct. 27 | | Oct. 20 | |
|---|---|---|---|---|
| | Light | Heavy | Light | Heavy |
| **Oklahoma—** | | | | |
| Tonkawa | 11,905 | ..... | 11,940 | ..... |
| Burbank | 27,010 | ..... | 27,415 | ..... |
| Other Osage Fields | 26,520 | ..... | 26,920 | ..... |
| St. Louis-Pearson | 128,215 | ..... | 127,540 | ..... |
| Cushing and Shamrock | 20,165 | ..... | 20,065 | ..... |
| Bristow | 20,685 | ..... | 20,770 | ..... |
| Allen | 23,345 | ..... | 23,390 | ..... |
| Seminole | 313,310 | ..... | 317,690 | ..... |
| Northern Miscellaneous | 110,190 | ..... | 110,845 | ..... |
| Southern Fields | 57,040 | ..... | 57,790 | ..... |
| Total Oklahoma | 738,385 | ..... | 744,365 | ..... |
| **West Texas—** | | | | |
| Hendricks | 144,230 | ..... | 150,180 | ..... |
| Yates | 73,620 | ..... | 71,462 | ..... |
| Remainder | 115,001 | ..... | 113,007 | ..... |
| Total West Texas | 332,851 | ..... | 334,649 | ..... |
| North Louisiana | 32,245 | 6,300 | 32,320 | 6,350 |
| Arkansas | 28,225 | 55,040 | 27,110 | 55,225 |
| North Central Texas | 143,854 | ..... | 144,373 | ..... |
| Texas Panhandle | 68,480 | ..... | 65,605 | ..... |
| East Central Texas | 22,926 | ..... | 23,230 | ..... |
| Kansas | 97,315 | ..... | 98,210 | ..... |
| Total Mid-Continent Area | 1,464,281 | 61,340 | 1,469,862 | 61,575 |
| Gulf Coast | ..... | 133,787 | ..... | 131,213 |
| Southwest Texas | ..... | 29,020 | ..... | 29,238 |
| Eastern | 113,500 | ..... | 113,000 | ..... |
| Rocky Mountain Area | 85,450 | ..... | 84,498 | ..... |
| **California—** | | | | |
| Santa Fe Springs | 38,000 | ..... | 37,000 | ..... |
| Long Beach | 190,000 | ..... | 187,000 | ..... |
| Torrance | 2,000 | 14,250 | 2,000 | 14,500 |
| Huntington Beach | 51,750 | ..... | 52,000 | ..... |
| Dominguez | 10,500 | ..... | 10,500 | ..... |
| Inglewood | 16,500 | 10,500 | 17,000 | 10,500 |
| Ventura Avenue | 53,000 | ..... | 53,000 | ..... |
| Seal Beach | 25,000 | ..... | 26,000 | ..... |
| Remainder of State | 54,000 | 160,500 | 55,000 | 154,750 |
| Total California | 440,750 | 185,250 | 439,500 | 179,750 |
| Total United States | 2,103,981 | 409,397 | 2,106,860 | 401,776 |
| Grand Total | | 2,513,378 | | 2,508,636 |

**Total Increase, 4,742 Bbls.; Light Oil Decrease, 2,879 Bbls.**



# Refinery Gasoline Prices Reduced

## All Grades of Natural Advance as Manufacturers Withhold Material from Market. Kerosene Plentiful. Fuel Oil Unchanged

By W. T. Ziegenhain

Practically all Oklahoma refiners reduced their gasoline prices on Monday or Tuesday of this week to 9½ cents and, although cheaper material is available and has been available for several weeks, the price at the larger plants is firm at 9½ cents. Natural gasoline advanced as a result of consistent demands from refiners and manufacturers are optimistic regarding the future of prices even though a substantial increase in production is expected in the Seminole area as new wells are completed and cold weather decreases evaporation losses. A report that a new contract was in the making between a Gulf Coast refiner and Oklahoma manufacturers calling for 250 cars of material monthly also gave the market new life. This contract, however, is not to become operative until the first of next year, so the present increase in prices could not be accounted for in this manner alone.

Kerosene continued to be offered in large quantities and prices were slightly lower, especially when made to meet North Texas competition. Colder weather may bring a large number of orders, and many refiners are hopeful this will occur over the next two weeks, but some relief may also come from exporters also. Distillate sales have been increasing weekly and those refiners specializing in the manufacture of furnace oils find a large share of their total shipments daily is furnace oil. The lighter grades still prove to be the most popular. There was no change in the fuel oil market, prices remaining at last week's level and plenty of material available at that price. Some sales are reported made to brokers at prices 5 to 7½ cents below the general price, showing the willingness on the part of some refiners to offer a rather wide margin in order to move the material.

### REFINED MARKET BAROMETER

Gasoline prices remained firm throughout the East, but a slight weakening was again evidenced in the Mid-Continent as the larger refiners reduced their quotations at the close of the week. The California market remained unchanged. Natural gasoline prices advanced in the Mid-Continent as manufacturers withheld their material awaiting fractionally higher prices. The outlook for relatively high natural prices seems very bright for the balance of the year. Kerosene continued to be offered in large amounts, and prices may go to still lower levels if the demand is not increased either as a result of greater domestic consumption as the winter weather approaches or as a result of export purchases, as expected. Fuel oil prices remain unchanged, and the future of that market remains as indefinite as ever. Wax renewed its advance, and this came as a surprise to many even though the statistical position of that market is in excellent shape. Lubricants were plentiful, and price concessions were offered for the larger orders.

**Mid-Continent**—The larger refiners reduced their gasoline quotations during the week, but the lower prices were firmly established and can not be taken as the beginning of a "collapse" which was earlier predicted. Natural gasolines featured the market as prices were advanced. The position of the balance of the market remained unchanged.

**Atlantic Seaboard**—Heavy export buying and a good domestic demand for gasoline well supported the market at last week's price level. Kerosene was also strong, with wax prices moving fractionally higher.

**Chicago**—The demand for gasoline continued favorable, but there was considerable "shopping" done and a wide range of prices existed. Kerosene and fuel oil were plentiful and a little of the material was available considerably under the general market, showing the poor position held by a few refiners.

**Pennsylvania**—Kerosene prices were reduced during the week. Cylinder stock showed considerable strength as the export demand increased and prices were advanced from one-half to 1 cent. Wax continued strong.

**California**—Export gasoline was reduced one-fourth cent during the week, but the local prices remained unchanged. There was no change in the balance of the market.

**Gulf Coast**—Lubricating oil prices remained unchanged despite the increased demand from northern refiners who blend their production with the Gulf Coast lubricants to make a lower cold test oil. Fuel oil continues to be plentiful, but refiners are unwilling to reduce their prices to move it.

### The Fuel Problem

The solution of the fuel problem seems to lie between cutting crude runs or building cracking units. The former offers immediate relief while it is generally realized cracking operations are very profitable. But it is difficult to anticipate any material reduction in crude runs over the immediate future so long as gasoline prices are maintained at their present level and crude prices remain at their present level. At present refiners are generally able to show a profit even from their skimming operations and so long as they can dispose of their production the trend will be to maintain crude runs.

Gas oil has followed fuel oil in its inability to strengthen even though it has a high potential value as cracking stock. This again indicated refiners who have cracking units have maintained a schedule of crude charges that will amply supply the needs of the cracking stills without going on the outside to augment their supply through purchases on the spot market. Likewise, the refiners not having cracking units have produced gas oil in large quantities and are finding competition keen in the industrial sales field. Should gasoline prices decline sufficiently or a crude advance come which would wipe out a greater share or all of the

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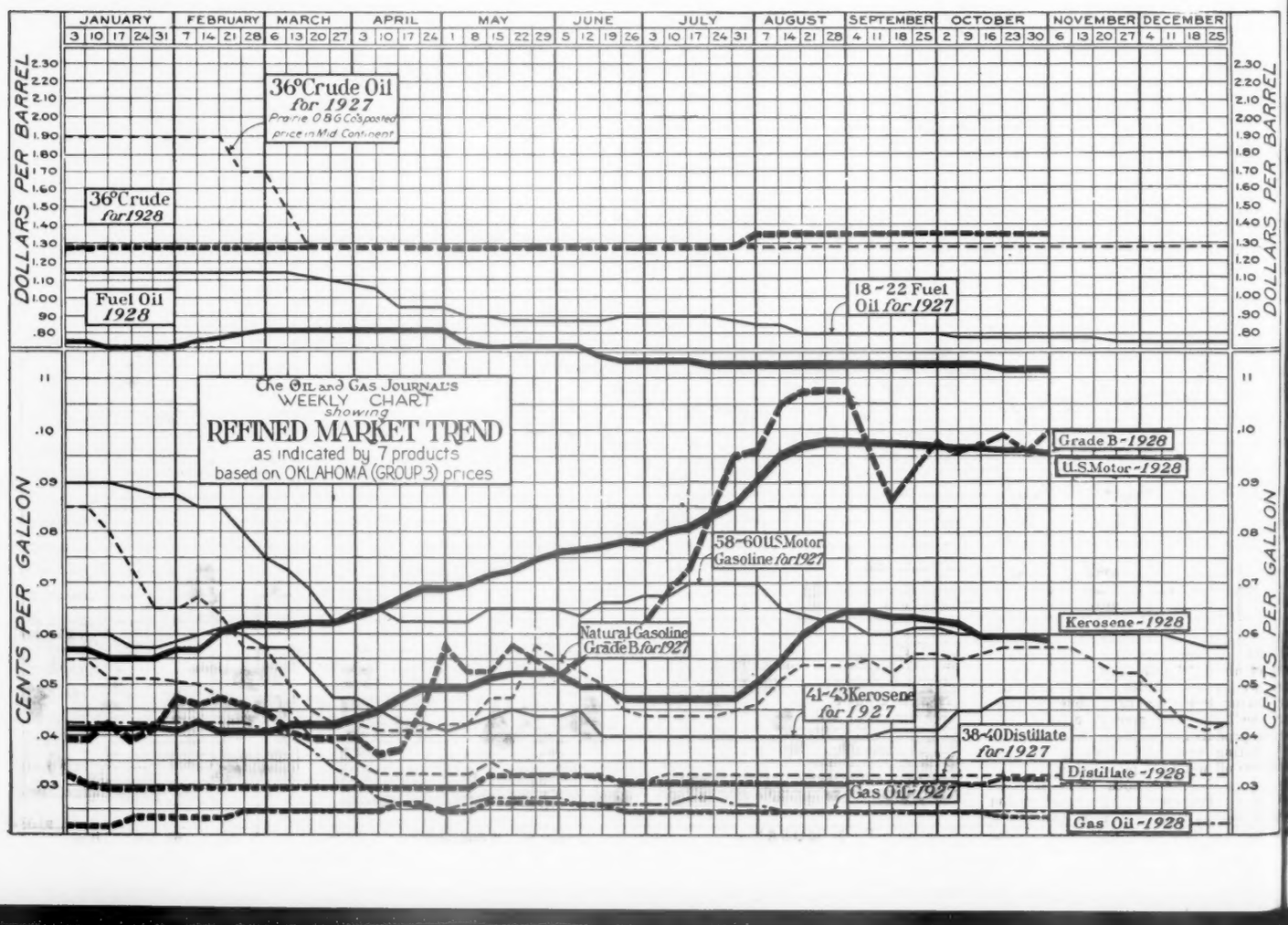

# Royalty and Producing Interests Same

## Co-operation Between These Groups in Output of Crude Is Essential to the Success of Conservation Movements

By James McIntyre

Until the petroleum industry is given permission by law to enter into agreements to prevent useless and wasteful overproduction of crude oil or until it is ordered by the law to do so for the benefit of generations to come, producers anxious to practice conservation will, of necessity, be forced to make shift for themselves and by common consent do away with such periods as they have suffered in the past two years.

The producing end of the oil business has been a feast or a famine since the beginning of the industry, with many more famines than feasts. With every other nation in the world holding back a goodly part of its oil until necessity requires its production, the United States has been milked of its petroleum resources at such low prices that foreign companies have found it more profitable to buy the cheap crude of this country than to produce oil from their own proven properties in other continents where oil is known to be in abundance.

But the American producer cannot voluntarily practice conservation in production without the co-operation of the owners of royalties, and not of a few of them, but all of them. When all royalty owners become fully acquainted with the complexities of the oil business and consider themselves an integral part of the oil industry—when they all realize that the producer's interest is their interest and his loss their loss, then there will be hope of a full co-operation between the two interested parties and production can be stabilized.

The large conservatively conducted royalty companies, as far as can be learned, are taking the right attitude. As the president of one of these companies said to the writer: "Our stand on the stabilization of production and market prices is the same as that of the producing companies. We certainly do not want to take $1.50 a barrel for oil that might bring us $2.50 if production were maintained on an even keel with demand. This company is not a speculator. When we buy a royalty we intend to keep it as long as there is production on the property, and we are satisfied that our ultimate revenue from that royalty would be much greater if production were kept down to demand and the price stabilized on a fair basis."

### Giving Away Wealth

It is a generally known fact that gasoline is the cheapest of all commodities when 1928 prices are compared with 1913 prices. The Government has told the whole country that this is so, and has issued tables and graphs to prove it. Now, it may be a matter of pride to the oil man that he is serving the public more generously than any other industry is serving it, but there is a limit to how far his charity should extend. With petroleum products a nearly universally used commodity, the industry that furnishes this necessity should receive enough for it so that all connected with the service can realize some profit. For two years the owners of more than 250,000 oil wells in the United States have not made money and the royalty owners have suffered their proportion. These 250,000 oil wells are producing an average of about 18 gallons of crude per day per well and over 100,000 of them are producing less than 12 gallons of crude per well and the market price of the crude produced is so low it hardly equals the lifting cost. The owners of these 250,000 oil wells are performing a service to the public for which they get practically nothing with the crude market where it has been the past two years, and the royalty owners interested in these old properties have had their returns reduced to a picayune figure.

About 7,500 oil wells in the country out of a total of approximately 319,000 are producing half the oil output of the United States.

### Few Wells Can Solve Problem

A permanent policy of conservative production of a relatively small number of flush wells would put the producing industry on its feet and keep it there. It would, in times of potential overproduction, keep the surplus oil in the ground, the natural place for storage, and would give the producer and the royalty owner a greater ultimate revenue from the sale of the oil produced. It would enable the owners of old settled properties on which there are 250,000 small wells to keep their leases up to the highest productive point possible, which would benefit the manufacturer of field equipment and supplies. No one would suffer and the ultimate consumer need pay little more for oil products than he is paying at present. Gasoline would continue to be the cheapest of all commodities.

### Bitter Experience of 1927

The experience of producers and royalty owners alike in 1926 and 1927 is a criterion by which to measure the value of conservation measures in production.

Take Oklahoma for the first example. In 1926, with purchasing companies and pipe lines pulling oil out of storage a crude market price of $2.31 per barrel as an average for the year was maintained. When Seminole began to threaten in the fall of that year the first of a series of market reductions was made and in the following year the market dropped to an average of $1.43 per barrel. These are figures given out by the United States Bureau of Mines (Department of Commerce) which also show that the total production of Oklahoma in 1926 was valued at $413,900,000, while that in 1927 brought the producer and royalty owner only $397,200,000. According to the government figures 179,195,000 bbls. of crude oil was produced in Oklahoma in 1926 and in the following year the production arose to 277,775,000 bbls., but while production increased 98,580,000 bbls., it brought to the producer and royalty owner $16,700,000 less than the smaller production of the year before. In other words, overworking the State's petroleum resources brought about a glutted market situation which made it necessary for producer and royalty owner to practically give to an ungrateful public millions of barrels of oil for absolutely nothing and to suffer a net loss in addition to the gift. Had producers and royalty owners jumped into the breach in the fall and winter of 1926 with the

(Continued on Page 101)

# Moran Heads Marland Company

## Selected as President to Succeed E. W. Marland. Had Wide Experience as Official of The Texas Company

D. J. Moran, vice president of The Texas Company and associated with that company for 20 years, has tendered his resignation, effective November 1, to become president of the Marland Oil Co., succeeding E. W. Marland, who resigned. W. H. McFadden, vice president of the Marland company and a director and member of the executive committee of that organization, has also resigned and announcement was made Mr. Moran has been elected a director and member of the executive committee to succeed Mr. McFadden.

Mr. Marland stated he resigned as he found it impossible to give as close attention to the affairs of the company as formerly. He will continue as a member of the board of directors and of the executive committee.

Mr. Moran became associated with The Texas Company in 1908 and served that concern in Oklahoma, South America and Mexico, being general manager of all the company's activities in Mexico. He was elected vice president, in charge of domestic and foreign production in 1922 and in 1925 was transferred to the New York office. As a director and member of the executive committee, Mr. Moran has recently been co-ordinating the merger of the California Petroleum Corp. and the Texas Company. He is regarded as one of the most able of the younger oil executives in the business.

The Marland company operates a 30,000-bbl. refinery at Ponca City, Okla., where its main offices are located. This is a complete plant and the company recently completed an improvement program costing approximately $6,000,000. The company has its own distributing facilities in several states of the Middle West and Southwest and during the past year has carried on a national distributing campaign for its lubricating oils.

The Texas Corporation has the widest distribution of petroleum products in the United States and operates more refineries than any other company. Its products are now sold in every state and it is understood it has plans under way which will intensify this distribution.

Statements emanating from Ponca City are to the effect Mr. Marland may form another oil company which will operate in Oklahoma.

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Recent large purchases of stock by the Fisher Brothers and Arthur Cutten have stimulated rumors affecting a number of large producing, refining and pipe line companies operating throughout the Mid-Continent area. While the heads of the different concerns mentioned in these rumors admit they have heard talk concerning mergers, all deny that anything definite has been decided.

It is admitted conditions within the oil industry make the trend towards large integrated companies an economic probability of the future, owing to the increasingly high cost of operation. A number of leading oil men in the Mid-Continent area express the belief at least one big merger is a possibility of the near future.

D. J. MORAN

E. W. MARLAND

—Photo by Rivkin.

W. H. McFADDEN

# Export Corporation Membership Open

## Shares to Be Available to All Interests, Large and Small. Lesser Refiners May Be Represented Jointly in Association

By Special Correspondent

NEW YORK, Oct. 27.—Membership in the proposed oil trade export association will be made available to the industry generally after preliminary organization work has been completed, it was learned here this week from interests close to the guiding spirits in the new organization. There has been no official announcement to this effect, but it is understood that something along these lines will be made public by the sponsors of the export corporation shortly. The various committees having the work of organization in hand are understood to be making satisfactory progress. No date has as yet been set for the next meeting of the group sponsoring the organization, although Walter C. Teagle, president of the Standard Oil Co. of New Jersey, and generally regarded as the moving spirit behind the export association, is expected to call another meeting as soon as the organization work has progressed sufficiently to warrant further action.

### Takes in Small Refiners

Under the present plan of general participation by the petroleum industry in the export combination, shares in the corporation to be organized will be made available to all interests who desire to take them up and whose status is such that affiliation with the organization is in order. The small refiners will not be left out of the picture, provision being made whereby a number of small interests, too small individually, may combine and jointly acquire a full share in the export group.

Some misapprehension is evident among independent operators in the export field as to their status under the plans for the export combination. Following the preliminary organization meeting held in this city October 15, it was generally believed that the 15 or more larger oil companies represented at that meeting would constitute the export association, and that the smaller factors in the industry would be left to themselves to devise ways and means of meeting the competition which the organization might logically be expected to develop. It appears evident, however, that the plans of the sponsors of the export group contemplate as nearly 100 per cent representation as is possible to obtain, and that the larger factors only are represented at the initial organization meeting merely because it was felt that some interests had to take the initiative in getting the movement under way, and that a gathering of representative members of all groups in the industry would not only be difficult to arrange, but would prove unwieldy as well.

Under the present arrangements, it is believed, the various committees which are now at work clarifying the various phases of organization work, will submit their recommendations in concrete form, these suggestions will be taken up at a general meeting of the sponsors and the finished export corporation presented to the industry for its approval and cooperation.

### Definite Promise to All

Organization of the export association holds out definite promise to the rank and file of small American refiners. There are literally hundreds of small refiners in the United States with marketing organizations sufficient only to handle their distribution in home and contiguous territories. Only the large refiners, principally the integrated companies, have developed their export outlets to the point where in the departmentization of their sales activities, special export departments have been created. Most of the small refiners have been forced to handle whatever export business they have been doing through brokers located in exporting centers. The result has been that the refiners have been left at the mercy of excessively fluctuating markets, and that their export operations in many instances, far from being satisfactory from the profit standpoint, have consisted mainly of virtually "dumping" surplus products into export channels to dispose of temporary surplus accumulations of stocks. Refiners in most instances have been willing to accept low bids on export stocks to protect their own home markets. Price fluctuations in export petroleum quotations are generally far greater in number than the price revisions in domestic markets. One reason for this is seen in the fact that owing to the great number of export operators and the wide diversification of export outlets of the small groups among refiners, the export market offers a fertile field for the circulation of rumors. In an active market, particularly a rising or falling one, export markets are literally honeycombed with rumors regarding prices paid, or alleged to have been paid, in export transactions. These rumors generally prove to be about 75 per cent unfounded when investigated, but under the stress of competitive selling, refiners have no opportunity of running down each report, and imbued with the idea that it is necessary to "meet competition" are often too prone to close deals merely on the basis of rumored sales by competitors. This situation ofttimes has been true of the large interests as well as the smaller refiners.

### Weaken Rumor Mongers

With the principal refining interests of the country joined together in a corporation, such as that proposed by Mr. Teagle and his associates from other large companies who are sharing with him the organization work, the field for dissemination of reports affecting export prices will be very materially curtailed. In addition, the export association will easily be a sufficient factor to "make the market" on export sales, and will be able to legally set prices for export petroleum product sales and maintain their schedules. Thus, "General Rumor" appears to be slated for retirement from the refined products export field.

Thus far, there have been no indications as to the status of brokers and exporting jobbers in the proposed corporation. While it seems certain that membership will be extended to all producing and marketing interests in the American petroleum industry, it is not yet known whether or not brokers and jobbers, without any actual production of their own, will be recognized as eligible for participation.

### Status of the Brokers

Among these latter interests, reports of the progress of the new export organization are being followed very closely. There has been intermittent conflict between the large refining companies with export organizations and many of the independent export operators for many years. Export operators, always on the alert for distressed stocks of refined products, have often taken hold of a falling market, bought up considerable quantities of distressed material, and sold it in foreign markets in competition with the large exporting companies, often breaking markets which the large companies have spent months in building up to an equitable basis. At times, American refiners with established export outlets have been forced to sell refined products, laid down in foreign ports, at prices under those at which the same products could be purchased, f.o.b. refineries, in the domestic market in this country. Regardless of the attitude of the proposed corporation toward the jobbers and brokers engaged in export operations, however, the latter feel that notwithstanding any arrangements which may be made for handling export sales by the

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# Cut Out Uneconomic Competition

## Greater Degree of Co-ordination in Producing Branch Also Necessary, Says New Jersey Company Publication

By Special Correspondent

NEW YORK, Oct. 29.—Elimination of uneconomic practices in competition and a greater degree of co-ordination of effort in the producing branch, are seen as the outstanding needs of the oil industry by the Standard Oil Co. of New Jersey.

The current issue of "The Lamp," publication of the New Jersey company, discussing oil company stock prices and earnings, under the heading, "Price and Profits," says:

"For some four years now the United States has experienced a tremendous boom in the security markets, and more particularly in the prices of industrial common stocks. One by one various issues have engaged investment and speculative popularity and moved to new high levels.

"Outstanding in this movement have been shares of the country's principal producers of motor cars. The sales and profits of that industry have reflected huge increases in the number of automobiles on the roads. With unimportant exceptions, there are no cars that can run without gasoline, and with no exceptions, any that can run without lubricating oil. Why is it then that the shares of the petroleum companies have not moved sympathetically with those of the automobile manufacturers?

"Not because of lack of business. The growth of gasoline and motor oils sales has been fairly uniform and rapid. Ten years ago the United States consumed and exported 92,000,000 bbls. of gasoline. Five years ago it required 199,000,000 bbls. In the year 1928, it will be 390,000,000 bbls. Here is an industry that is free from depressions in consumption, with an ever-expanding market for its products, supplying a commodity in general use, blessed with an ample reserve of raw material; an industry that made possible the automobile; that has been alert to improve manufacturing processes and enlarge its markets, and one which has been generally the beneficiary of excellent management.

### Earnings Not Commensurate

"The explanation of the lagging market in oil securities is found in petroleum company reports. Why earnings have not been commensurate with the volume of business is a long story, many chapters of which have appeared in previous numbers of 'The Lamp.' Summarized, it boils down to this:

"Petroleum is not a controlled industry. There is in it no single or group interest which by virtue of its size is dominant. Competition has run wild, and often destructively. It has brought in new producing fields before they were needed and forced the sale of surplus crude at ruinous prices. Competition has built too many refineries and pipe lines. The surplus of products led to overbuilding in retail outlets. All along the line overproduction has been costly. Like a man on an icy hill, the industry has tried to keep its feet by ever running faster.

"The public has apparently benefited through low prices paid for petroleum products. Actually, of course, it could have had the same prices and the industry could have made a satisfactory amount of money had there been some way to co-ordinate production and the markets. Whether the public has benefited permanently is open to question, but there is no doubt about what the industry has lost. Working with an illusive raw material, found and produced at great expense and moved sometimes half-way round the world to reach its markets, the oil industry has not made a fair profit for several years past.

### Earnings Per Barrel

"A compilation of the results achieved by the principal companies (representing 44 per cent of the total production) in the five years from 1923 to 1927 inclusive, shows average earnings per barrel of gross production of 61 cents or about 40 per cent of the average posted price for crude oil during the same period. This represents the total profit from production, transportation by pipe line or tanker, and the employment of costly processes of manufacture and agencies of distribution. In addition, it includes considerable earnings from other sources, such as natural gas, casinghead gasoline, patent royalties, investments, etc. It is therefore an outside figure which would be lower if limited strictly to earnings from the barrels of crude oil.

"These figures are not offered as a plea for sympathy. The condition is not the public's fault. We have been in a buyers' market for these five years and the buyer would be a rara avis if he did not profit by competition to get the lowest price. The problem is the industry's, which must work out its own salvation by the slow process of educating thousands of companies and individuals to the necessary planning what they will produce against what the market will consume.

"Increased earnings by the industry do not necessarily spell materially higher prices to the consumer. They can be achieved through the reduction of costs that have been unduly high because of the way business has been conducted. Substantial savings can be made in the production of crude oil. Economies will result when the storage of crude and finished products can be reduced. Refinery operations also offer opportunities for lower costs, and of course it is patent to all that the country has been oversupplied with retail outlets. Elimination of much of our wasteful competition through the co-ordination of production

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# Great Oil Show Unqualified Success

## Visitors, Exhibitors and Management Declare Exposition of 1928 a Marvelous Presentation of Equipment and Methods

By Thomas F. Smiley

With all attendance records smashed, the Fifth International Petroleum Exposition passed into history last Monday night, the premanence of these annual oil fairs virtually assured. At a meeting of the board of directors Monday afternoon a gold watch was presented to J. Burr Gibbons, general manager of the show, as a token of the board's appreciation of his services the last two years. On the back of the case was engraved "Presented to J. Burr Gibbons by Directors of International Petroleum Exposition, October 29, 1928." Mr. Gibbons has been made vice president and general sales manager of the Oil Well Improvements Co. and will assume his new duties November 1.

Following the meeting of the directors Monday afternoon, A. W. Leonard, treasurer of the exposition, said that while all bills incurred were not in yet and precise figures could not be given, the exposition of 1928 had ended without a deficit.

That exhibitors found the oil show beneficial to them in a business way is indicated by the fact that purchases of equipment involving an aggregate figure said to be close to $3,000,000 were made on the ground. These contracts included drilling outfits, engines, compressors, derricks, sand reels, gas and water valves, cutting lathes, countershafts, etc.

Excepting the last day the weather throughout the 10 days of the exposition was almost perfect. Such rainfall as there was came at night and did not interfere with the show.

Whether the exposition be viewed from the standpoint of the exhibitor, the visitor or the management, it will have to be written down as a clear, unqualified success. Even a most conservative statement of the results achieved and of the interest aroused and held for 10 consecutive days is likely to be looked upon as exaggeration by readers who did not attend the great oil fair. There is no danger of such a suspicion, however, on the part of the thousands who saw it for themselves, who studied the displays, who brushed elbows with the daily crowds and who listened to comments.

Expressions obtained at random from the various groups at interest—from sightseers; from manufacturers and others who had come from many parts of the country to show oil men their products, and from directors of the exposition, who had worked hard and long in preparation for it—all united in declaring this year's oil show a marvelous presentation of the latest equipment and the most advanced methods employed in the production, processing and transportation of petroleum products.

### Unifying Influence Great

The educational value of the exposition can hardly be overestimated. And there is a by-product whose importance it would be difficult to measure too—a by-product that perhaps was not taken into account by the founders of the exposition at all—and that is its unifying influence. No one who walked about among the throngs at the ground from day to day and who chatted with persons representing the different interests assembled there, could fail to be impressed by the fact that this close contact of different groups and the exchange of views was having the inevitable result of broadening the vision of all, of increasing friendly understanding of each other's problems and of promoting fraternal feeling generally.

The high character of the exposition was indicated in various ways. Its semi-official standing was shown in the action of the United States Government in extending invitations to foreign nations to send delegates. The exhibitors were among the foremost manufacturers of machinery and scientific appliances in the world. There was no touch anywhere of the tawdry or cheap. The exposition was opened formally by that commanding figure in the steel industry, Charles M. Schwab, and it has been suggested that next year the President of the United States be invited to perform that ceremony.

W. G. Skelly, president of the exposition, expressed gratification. He said:

"I think everyone will agree that the Fifth International Petroleum Exposition was by all odds the greatest yet held. In point of attendance, number of exhibits and truly international character it surpassed its predecessors. The ideal weather that prevailed was, of course, a big help, in contrast to previous shows.

"One fact has been firmly established and that is that the industry throughout the world now recognizes the exposition as a permanent annual affair of great value to the industry in all of its branches. The attendance of leading men in the petroleum and other industries served to emphasize this fact more forcibly than ever before. The presence of such a distinguished industrialist as Charles M. Schwab on our opening day was extremely gratifying. And then came a succession of really big men. From all over the world they came. Men like Colonel Stewart of the Standard of New Jersey, Judge Amos Beaty, former chairman of the board of The Texas Company, W. S. Farish, president of the Humble company and a long list of similarly important executives and leaders were our guests during the exposition. I don't believe there was ever a more representative group of oil men under one roof than attended the annual dinner of the Mid-Continent Oil & Gas Association, one of many features of exposition week.

### Get Concrete Results

"The exhibitors are all well pleased because they obtained concrete results from the huge sums they expended in order to properly display their wares. It was the most complete and comprehensive display of equipment and scientific exhibits ever assembled by any one industry. The practical good that came from this was best illustrated by the groups of field men, superintendents, gasoline plant operators, refinery men and so forth who were brought in by the various companies. It was a post-graduate course for all of these men in the latest and most improved methods of operation in all departments of our business.

"Twenty-four foreign nations were represented by official delegates. Their contact with our American oil men at the exposition will result in much good and possibly lead to the extension of our American spirit of co-operation, more pronounced by the way at this time than ever before, to the oil fields of the world. Our neighboring country of Canada had a large representation at the exposition as well as Rumania, South America, Russia and other nations that produce petroleum.

"I wish to express my sincere thanks to the board of directors and official staff of the exposition for their untiring efforts to make the exposition the success that it was. This was one board of directors that really functioned, each director taking his tour of duty by actually being on the job and many of them devoting their entire time to the exposition for weeks. That is the spirit that has enabled the industry to meet its problems during the past year with greater success than ever before and that is the spirit that will enable the exposition to carry on from year to year and become of constantly increasing value to our industry.

"The mayor and all of the people of Tulsa now realize that it is their exposition as well as the industry's and I am sure that the Tulsa hospitality extended to our many visitors made a very favorable and lasting impression upon them."

### Permanency Assured

"The phenomenal success of this year's International Petroleum Exposition," said J. Burr Gibbons, general manager, "breaking as it did all attendance records for gatherings in the State and drawing to its plant scores of outstanding leaders of our nation and influential representatives of England, Canada, France, Italy, Germany, Holland, Russia, Austria, Rumania, Poland, Japan, Korea, China, British West Indies, Denmark, Mexico, Colombia, Argentine, Venezuela, Ecuador and Cuba, should give complete assurance, if doubts have existed, of the permanency and the international scope of the World's Fair of the Oil Industry.

"The completeness and magnitude of the exhibits has proven intensely interesting to field, refining and technical men, has overwhelmed the foreign delegates and has been very gratifying to exposition officials.

"To attempt to dilate upon the $10,000,000 worth of the petroleum industry's displays at the oil show for the readers of publications devoted to the industry would at this date be needless repetition. The reaction of international and national leaders to the show has been such it will be absolutely proper that the next International Petroleum Exposition be formally opened by the President of the United States in person."

The interest manifested by companies engaged in various branches of the petroleum industry was among gratifying features of the exposition. Many of these sent groups of employes, including men holding supervisory positions, to the show to study the appliances and methods there demonstrated. Commenting on this action of employers, E. J. Nicklos, division manager of the Oklahoma-Kansas division for The Texas Company, said:

"The prime meaning of the petroleum exposition to our organization is education with the attendant broader range of ideas to our employes. Many of our employes and key men attended and gathered new ideas for immediate as well as future application to our work. The wider their knowledge of the many details of the petroleum industry, the more effective will their efforts become. An exposition of this sort seems to me a necessity to keep the men of the industry generally up to date with the latest developments, to instruct in their application and to revive and stimulate thought along new lines as well as old."

"This exposition was the largest exhibition of equipment used in a single industry ever held anywhere," said J. H. Satterwhite, a director of the exposition and president of the Natural Gasoline Supply Men's Association. "To find any-

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## OIL MEN REMEMBER FRIENDS WHO SLEEP IN BURIAL PARK

They were sitting in the lobby of the Mayo Hotel talking about old days and old friends in the oil fields. There were R. R. Forster, production superintendent for the Simms Oil Co., Dallas, Tex.; M. J. Grogan, pipe line superintendent for the same company; Tom Sterrett, oil man of Corsicana, Tex.; Charlie Gilman of the D. & B. Pump & Supply Co., Los Angeles, Calif., and R. H. Shattuck, independent oil producer of Dallas. All had come to Tulsa to visit the International Petroleum Exposition or to help in the supervision of exhibits there.

They called to mind incidents—some funny, some serious—of long ago. They recalled various personal traits of men who once had been their daily associates in some branch of the oil business. Mr. Forster spoke of the unfailing optimism of J. P. Riley, former oil man of Tulsa, whom all had known. Even the black days of 1921 could not dampen Mr. Riley's cheery spirit. One day when the depression of that period was at its bluest, he told Mr. Forster with a chuckle: "I've just been kidding Milt Hale, the hardware man. He had a coil of rope in front of his store. I told him to get it out of sight, for if he left it so handy there, he'd have only himself to blame if a lot of these pessimists used it to hang themselves from the West Tulsa bridge."

But death had taken the light-hearted oil man, and as the group in the hotel lobby lived over in memory incidents of other years it was brought home repeatedly that many, perhaps most, of the men who figured in their reminiscences had passed on.

"What has become of so and so?"

"Dead."

Again and again came the question and the saddening answer.

"And there is snow on our heads," was remarked.

"Fellows," spoke one of the group, "none of us realized, I guess, how many of the boys are sleeping out in Rose Hill Burial Park. I'd like to pay a little tribute to them. Would you?"

The same thought seemed to have been in the mind of each of the others. Together they went to a florist's shop, where they bought abundantly of roses, carnations, chrysanthemums, marigolds, dahlias. Taking the flowers with them, they drove out to Rose Hill Burial Park, where, guided by Supt. Clarence O. Winterringer, they visited the grave of one former oil man after another. On each they laid a cluster of flowers and then, with heads bared, stood in silent reverence for several minutes. More than once tears came as they stood thus beside the resting place of a former friend.

Little was said as the group rode back to town. Each man was absorbed in his own memories. But it is said to be likely that an annual observance will grow out of the incident through inclusion of memorial exercises in connection with future expositions.

# Farish Discusses Petroleum Situation

## Need of Better Means of Developing Flush Fields Told Mid-Continent Oil Men. J. D. Collett Issues Warning

Conservation in the oil industry and the means of making it effective formed the subject of a symposium of views expressed by speakers at the annual dinner of the Kansas-Oklahoma division of the Mid-Continent Oil and Gas Association in Tulsa on Wednesday evening, October 24.

The addresses followed a banquet given in the Mayo Hotel which was attended by 450 oil men representing nearly every state where oil is produced, with a sprinkling of guests from foreign countries.

In the list of speakers were W. S. Farish, of Houston, Tex., president of the Humble Oil & Refining Co., and J. D. Collett of Fort Worth, chairman of the Winkler County Operators' Committee, and himself a prominent oil producer in the Texas fields. These Texans gave

W. S. FARISH

the nearly half hundred oil men present something to ponder over. Mr. Collett made it very plain to Oklahoma oil men present that Texas producers do not consider Oklahomans have done their part in the business of curtailing crude production and that while Texas operators have been taking only a small percentage of the potential production out of Pecos and Winkler Counties it is a question of how long they will be willing to continue their policy without better co-operation in Oklahoma.

Mr. Farish delivered an important address in the course of which he made this significant statement: "Because of the policy of the producer, oil is being brought to the surface in such volume as to force the refiner to go farther and farther afield in order to sell his products. The refining industry in the United States as a whole is extracting about 41 per cent of gasoline from crude * * * Forty-six per cent of the crude run to stills is fuel and the quantity of this product has become so great as to glut the market and lower the price to its present uneconomic stage." In another place he said: "Fuel oil brings less than 50 per cent of its economic value as compared with coal." Mr. Farish said the industry could not go on as it has been going, and that we must have a new starting point; we must find new ways of restraining production in new flush fields.

J. C. Denton, president of the Oklahoma-Kansas division, was toastmaster, and called upon Gurney E. Newlin, of Los Angeles, Calif.; Amos L. Beaty of New York, Dr. George Otis Smith of Washington, D. C., J. D. Collett of Fort Worth, Tex., R. F. McArthur of Tulsa and W. L. Farish of Houston.

### Law and Posterity

Gurney E. Newlin, of Los Angeles, Calif., a director in the Union Oil Co. of California and president of the American Bar Association, was the first speaker of the evening. "Law and Posterity" was the subject of his speech. Mr. Newlin reviewed the economic history of the United States and the manner in which the law had met every change in the evolution through which the country passed. Referring to the clash between the antitrust laws and the conservation movement, Mr. Newlin said:

"Then there came forward the demand, possibly not yet a demand but a suggestion, that we must intelligently use that which we have. We must conserve as long as possible that which cannot be replaced and to those far-seeing and with knowledge came the answer: 'You cannot save, you must produce. We who live must use it all. You cannot agree to save—the law passed 37 years ago prohibits saving. Strip your mines, pour forth your oil, denude your forests, waste your fisheries—at a loss, if need be, but give and give it cheaply. The laws of Congress and the states forbid you to do otherwise!'

"As the consciousness of the people turned toward preservation and conservation of our natural resources, lawyers immediately endeavored to work out ways and means whereby the law could respond to the consciousness.

"There was created by the American Bar Association in 1926 the section on mineral law for purposes of studying the legal aspects of matters pertaining to the production and marketing of our natural resources.

### Washington Takes Action

"In 1927 the secretary of the interior called the association's attention to the waste that was daily occurring in the petroleum industry through overproduction. He requested that a committee be appointed to confer with a committee appointed by the industry and one named by the Government to work out ways and means whereby this waste could be legally avoided.

"Pursuant to this suggestion on the part of the Government, a committee of nine members was appointed by the chairman of the mining law section, which I had the honor to hold at that time, for the protection of the future. This committee met with the other committees with the result that the American Bar Association, at Seattle recently approved a bill which will be introduced in Congress when it reconvenes.

"This bill is to permit in times of overproduction and uneconomic production a curtailment, subject to the consent and approval of the Federal Oil Conservation Board and providing such an agreement shall not be in violation of the Sherman antitrust act, or considered a restraint to trade.

"It was the first step ever taken by a duly constituted body of lawyers, constructively endeavoring to work for the preservation of our heritage and conservation of that which cannot be replaced. It is an illustration of the law marching hand in hand with economic and social development."

This bill will be introduced in the next session of Congress.

### Judge Beaty Sees Progress

Amos L. Beaty of New York congratulated Mid-Continent oil men on their performance of the past year. They had, he said, taken hold of and handled successfully a situation which two years ago was regarded as impossible. They have conserved without a conservation law. Judge Beaty said he could not conceive of a set of laws that could do what oil producers have voluntarily done. Judge Beaty reminded his hearers that four years ago he had expressed himself in favor of owners of a pool and royalty owners organizing themselves into a Massachusetts trust with a managing board and a co-operative operating policy, but that it had then fallen flat because the spirit of oil men was that each wished to operate his own property untrammeled and to enjoy the fruits of his own success in their fullness. This spirit has gradually given way to the co-operative spirit, which is now in the way of development.

Judge Beaty commended the American land title system which gives the owner of land the subsurface rights. This system, he declared, was responsible for our

J. D. COLLETT

present position at the top of the world. It is responsible for the 23,000,000 automobiles owned by Americans, because had the subsurface rights been possessed by the Government and not by the land owner we would not have produced the volume of oil possible to run the motor cars of today, and it is even doubtful if there would have been a Drake well.

### Government Is Sympathetic

Dr. George Otis Smith, director of the United States Geological Survey, brought the assurance from Washington of the sympathetic spirit of the Government in the oil industry's attempt to regulate its business by means of conservation measures. Speaking of progress, he said that in the past four years more oil had been produced than in all the years from the beginning of the industry up to the opening of the world war and that the progress of the industry toward self regulation had more than kept pace with the increase in production. He concluded by saying:

"This brief review of the four years that have marked so much progress would be incomplete without mention of forces and influences that have contributed to the state of affairs today. But I feel compelled here and now to single out the man who was rather lonesome in October, 1924, in holding views that most of us subscribe to in October, 1928. At least I know that he was the man who brought the idea to Washington. It is my firm opinion that Henry L. Doherty started something worth while about four years ago."

J. D. Collett, of Fort Worth, an oil producer in the Texas fields and chairman of the operators' committee of the Winkler County Pool, made an illuminating talk on what had been done in prorating West Texas flush fields and conveyed to Oklahoma producers the opinion of Texas operators that their Oklahoma brethren had not held up their end in the matter of curtailing their production. He said that while it was true no plan of proration or co-operation could be evolved that was absolutely fair to all, the West Texas plan was as fair as it could be made. Some day, Mr. Collett said, oil men may look back and in the light of their advancement in engineering skill consider the 1928 plan as crude, for petroleum technique is advancing fast and will continue to improve. As an aside Mr. Collett said that geological and engineering skill had already become so good as to make it too easy to find oil.

Mr. Collett gave some figures on proration in West Texas. Last May when proration was begun in Winkler County a 521,000-bbl. potential production was voluntarily lowered to 150,000 bbls. a day. In August a potential production of 1,808,000 bbls. from 5,480 productive acres was cut to 175,000 bbls. of actual production. The actual production was only 9.6 per cent of the potential. On October 15, a 2,500,000-bbl. potential production was kept down to 132,500 bbls. a day or 5.3 per cent. The productive acreage in Winkler had increased from 3,160 in May to 6,960 in October, and the potential had increased nearly five-fold yet the actual production was held as low or lower in October than it was just after proration was put on in May.

In the Pecos County area production has always been held down to a minimum, Mr. Collet said. In October, 1927, it was producing 12 per cent of its potential. In June, 1928, with a potential of 1,800,000 bbls. a production of 52,500 bbls. was permitted, or 2.92 per cent. On October 15, with a potential placed at 4,049,000 bbls. per day only 72,500 bbls. a day was produced or 1.79 per cent of the total possible output. Mr. Collett after reading the above figures asked Oklahoma men to point to a pool in Oklahoma which was being held down to 1.7 per cent or to 5.3 per cent of its possible production. He declared that there was more oil shut in in West Texas than Oklahoma is producing. He expressed the opinion that it was not fair to make the West Texas oil operators bear so much of the burden of curtailment of production and that in his opinion it could not continue. The holding back of the big West Texas Field, he said, was responsible for the present improved conditions in the oil industry.

### McArthur on Oklahoma Results

R. F. McArthur, of Tulsa, vice president of the Barnsdall Oil Co. and a member of the Seminole shut-down committee, reviewed the results of curtailment in the Seminole area and of the conservation movement generally.

"Two years ago," Mr. McArthur said, "certain leaders of our industry appreciating the debacle that threatened the Mid-Continent Field revived this movement which forms the topic of our discussion this evening. There is no doubt in the minds of most Seminole operators that had the movement not been started crude oil production would have reached a figure quite beyond the needs of the market.

"Various plans have been adopted to solve our problems. Lessees have pooled their acreage, thus reducing the number of wells drilled. Where short term leases required the drilling of wells such wells have been shut in to a minimum production. In some instances lessees have s

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# Use of the Magnetometer in Oklahoma

## Survey Shows This State Not as Favorable for This Work as Kansas and Texas, Although Extensive Surveys Are Being Made

By L. Spraragen

**Accompanying is the first part of the article giving a magnetometer survey of the State of Oklahoma. This series of articles by Mr. Spraragen covers six states. The survey of Kansas was completed in the October 25 issue of The Oil and Gas Journal.**

Considerable territory in Oklahoma has been surveyed with the magnetometer and in several instances the blocking and leasing of acreage has been done on the basis of these magnetometer surveys.

From a geophysical viewpoint a large part of this State is not as favorable a territory to prospect with the magnetometer as is Kansas and some parts of Texas. Although the work can be done quite rapidly on account of the division of the land in uniform sections and numerous east-west and north-south roads yet the process of interpretation is rather more complicated.

At the present time the magnetometer is being used very extensively in central and western Oklahoma. Several consulting firms have very carefully mapped large areas in western Oklahoma and are advocating leasing on the strength of the magnetic highs found. Unfortunately there is scarcely any assurance that these magnetic highs are actual structural highs. In fact if the magnetic conditions in western Oklahoma are similar to those in Kay and Grant Counties, then those contemplating leasing acreage on the strength of the magnetometer survey alone should do so with great caution.

Unfortunately the cost of core drilling is considerable, otherwise it would be a comparatively simple matter to check some of these magnetic highs. It is here that the larger organizations have a considerable advantage in the use of geophysical methods because it is possible for them actually to check over the more favorable places with the core drill.

To stress more clearly the importance of interpretation of magnetometer data the reader is referred to articles in this series appearing in The Oil and Gas Journal[1].

In general the author has found in going over several of the well-known oil fields in northern Oklahoma with the magnetometer that the direction of the axis of the field can be determined quite accurately, and in most cases the actual production is not found on a magnetometer high but is rather displaced therefrom, usually in the direction of a nearby pronounced magnetic low. In connection with this it was pointed out in the writer's first article, under the heading, "Interpretation By the Empirical Method," that the effect of the presence of a large quantity of well casings in the ground may have considerable bearing on the results obtained in going over the known fields.

[2] "The structure of Oklahoma may be best thought of by picturing the four mountain areas of the State, the Ozark Mountains in the northeastern part, the Ouachita Mountains in the southeastern, the Arbuckle Mountains in the south central and the Wichita Mountains in the southwestern part of the State. The rocks in each of these areas are greatly folded and, especially in the Ouachita Mountains, faulted. Between the Ozark Mountains on the northeast and the Ouachita and Arbuckle Mountains on the south and southwest, is the Arkansas Valley trough in which the rocks are thrown into strong folds, but with only a minor amount of faulting. In the central part of the State the rocks have a gentle dip in a general westerly direction away from the Ozark and Arbuckle uplifts. The general westward dip is interrupted in many places by very gentle folding. The westward dip continues nearly to the western border of the State, becoming more and more gentle as the distance from the mountains increases. Along a line extending in a general north-south direction, about the longitude of Alva and Arapaho, the rocks are very nearly level, and from there on west have a very slight eastward dip due to the influence of the Rocky Mountains to the west. This, of course, indicates a trough or basin condition.

"The Ozark uplift includes a large area in southern and southwestern Missouri, northwestern Arkansas, southeastern Kansas, and extends a distance of several miles into the northeastern part of Oklahoma. The area includes all of Delaware, the greater parts of Ottawa, Mayes, Cherokee and Adair, with small portions of Wagoner and Craig Counties.

"The Ouachita Mountains lie in southwestern Arkansas and southeastern Oklahoma. The region in Oklahoma includes southern LeFlore, southern Latimer, southeastern Pittsburg, northeastern Atoka, practically all of Pushmataha, and the northern two-thirds of McCurtain Counties. The Ouachita Mountains are called Kiamichi Mountains by many Oklahomans.

"The Arbuckle Mountain region lies

(Continued on Page 102)

[1] "The Use of the Magnetometer in Prospecting for Oil-Bearing Structures and Some Results Obtained."

[2] A Magnetometer Study of the State of Kansas—Plate 7. Oklahoma Geophysical Survey—Bulletin 42.

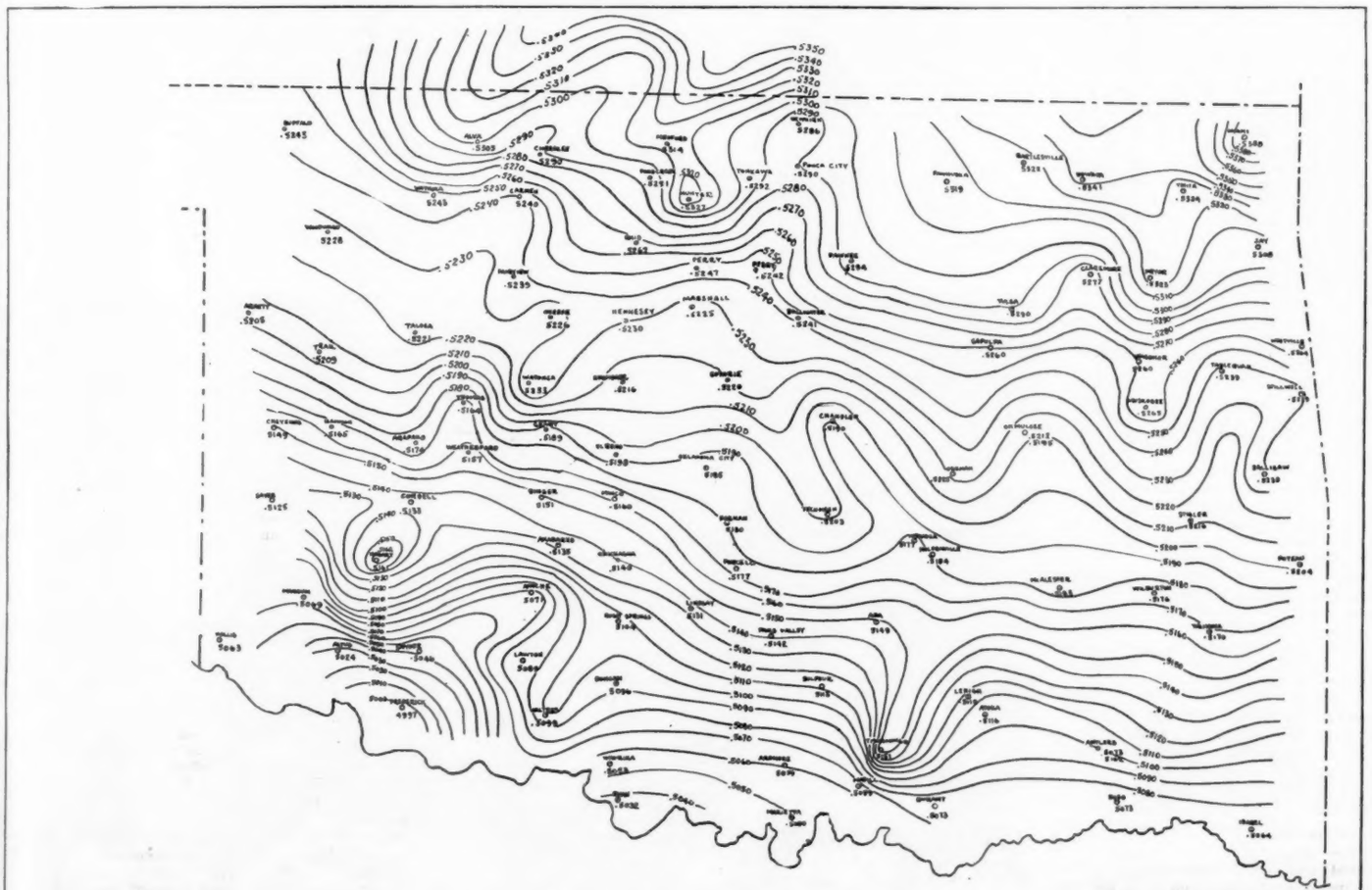


PLATE-1

VERTICAL MAGNETIC INTENSITY MAP OF OKLAHOMA.
Values taken from the U.S.C.& G. Magnetic Survey. No regional corrections applied.
Contour interval ..... 100 Gamma.
Scale 10 miles June 20, 1928.
Drawn by ..... L. Spraragen.

# Schools Perfecting Petroleum Courses

## Many Now Offering Studies and Field Practice Designed to Prepare Students for Specialized Work in the Oil Industry

By Thomas F. Smiley

With the petroleum industry turning more and more to technically trained men for the solution of many of its problems there has fallen upon the schools of the United States the necessity of offering curricula that will give young men a more intelligent approach to specialized work in various branches of the business. Colleges and universities have met the new situation promptly and in the main adequately and they are steadily perfecting their facilities.

A survey made by The Oil and Gas Journal of 132 educational institutions throughout the country reveals that 11 have established full courses in petroleum engineering. These courses provide not alone sound basic training in physics, mathematics, geology and chemistry, but give major work in geological engineering for the student in geology, in petroleum engineering for production and refining, and in mechanical engineering for pipe line work, along with actual field practice that goes far toward narrowing the inevitable chasm that separates the novice from the experienced craftsman. Ten have installed courses which while they cannot be described as complete, nevertheless offer studies designed specifically to prepare young men for positions in the oil industry.

Fifty-one offer scientific courses that give an excellent foundation for specialized work in petroleum. In some cases these courses have been broadened for the express purpose of enabling students better to equip themselves for work in the production, refining and transportation of oil. Sixty, which are distinctly liberal arts schools, offer no special inducements to the young man contemplating a career in the oil business. These last are for the most part schools upon which little demand is made for other than cultural instruction and usually they are remote from oil operations.

The institutions offering complete courses in petroleum are: University of California, Berkeley, Calif.; University of Pittsburgh, Pittsburgh, Pa.; Colorado School of Mines, Golden, Colo.; University of Southern California, Los Angeles, Calif.; Agricultural and Mechanical College of Texas, College Station, Tex.; State College of Washington, Pullman, Wash.; Stanford University, Stanford University, Calif.; University of Tulsa, Tulsa, Okla.; University of Minnesota, Minneapolis, Minn.; Missouri School of Mines, Rolla, Mo., and University of Oklahoma, Norman, Okla.

### Hard to Draw Line

Obviously the advantages offered by these schools differ and difficulty is experienced in drawing a line between some of the schools in this group and some of those in the group of 10 which do not offer definite courses in petroleum, but which have made additions to their scientific courses that afford distinct aid in preparing the student for work in the oil business.

Each one of the 11 schools named in the foregoing group carries a student through a course of study and field work designed to fit him for entrance into petroleum production, petroleum refining, geological exploration or pipe line work.

The studies include fundamental geology, mineralogy, petrology, petrography, paleontology, stratigraphy, sedimentation, field geology, petroleum engineering, chemistry, oil technology and historical geology.

Various kinds and amounts of field work are provided for. Two days a week for three semesters is devoted to practical field work by the University of Southern California. The University of California course gives one month to summer surveying, six weeks to summer geology and three months to oil field work. The petroleum engineering course at the University of Oklahoma requires 150 days of practical field work. At the Colorado School of Mines students are advised to work in oil fields or refineries in the summer. An inspection trip of two weeks to oil fields and refineries is compulsory in the Junior year. Co-operative work with different branches of the oil industry during each summer forms a part of the course at the University of Pittsburgh. Summer work on pipe lines and in refineries is done at the Agricultural and Mechanical College of Texas. Summer vacations are given over to practical work at the State College of Washington and at Stanford University. The Missouri School of Mines requires that students work at least one summer in that particular branch of the petroleum industry in which they expect to specialize. For instance those graduating in petroleum production must work in the oil fields one summer. Those in the refining course must work in a refinery or some similar chemical engineering plant. Those graduating in geology must spend a summer in geological or mining work. The University of Minnesota has its students visit oil fields, these trips occupying 10 days to two weeks.

### Four-Year Course Rules

Each of these 11 schools requires completion of at least a four-year course. The courses at Stanford University require six years. At the University of California four years' work is required for a bachelor's degree, five for a master's and seven for a doctor's or engineer's. Graduation from an accredited high school is the common requirement for entrance. In almost all cases the degree conferred is Bachelor of Science in the course taken, though some of the schools confer various engineering degrees.

The number of students enrolled in the petroleum courses of these schools varies. Those institutions which are located close to oil fields and for this reason have been spurred to special effort in making these courses highly valuable have the largest enrollments of course. As might be expected, the University of Oklahoma, at the door of a great productive area, leads with 200 students. The Agricultural and Mechanical College of Texas had 153 last year. The schools report a growing number of students from year to year, indicating the increasing degree in which young men are turning to the oil industry in the selection of a career.

Physical equipment for fuller study and research in production and refining work is receiving a large measure of attention from the faculties of those schools that have established petroleum courses. That at the University of Oklahoma is especially complete. That institution has installed an air and gas lift production unit and a skimming plant, and it is planned to give students an opportunity to become familiar with the best practices in production and processing from the choosing of the well location to the time the finished products of petroleum are ready for marketing. A 90-foot derrick has been constructed for the study of production methods. Compressors, lines, separators and tanks form a complete air and gas lift unit. Six platforms built into the derrick at different heights permit study of pressure drops, temperature changes and consistency of flow. The supply of oil for this experimental work comes from a tank, and actual field conditions are simulated closely.

### Plenty of Jobs for Graduates

Little or no difficulty is met in finding positions for graduates, according to reports from the schools. "We generally can place more men than we graduate," says Prof. R. C. Beckstrom, of the Colorado School of Mines. (Professor Beckstrom recently became dean of the school of petroleum technology, University of Tulsa.) "Graduates generally are pledged before they are through with their academic work to one oil company or another," Prof. L. C. Uren, of the University of California, reports. F. C. Bolton, dean of the School of Engineering, Agricultural and Mechanical College of Texas, writes, "We always have had more positions to fill than we have graduates to fill them. The ratio is about 3 to 1."

"Our graduates without exception have gone into work along the lines of their profession during the five years the registrar's office has been handling the placement of seniors," says Noel Hubbard, alumni recorder at the Missouri School of Mines. "We circularize the industries each spring, calling attention to our graduating class, and in the refining end especially we have never been able to supply the demand made upon us for graduates." The University of Southern California "usually has them placed before graduation."

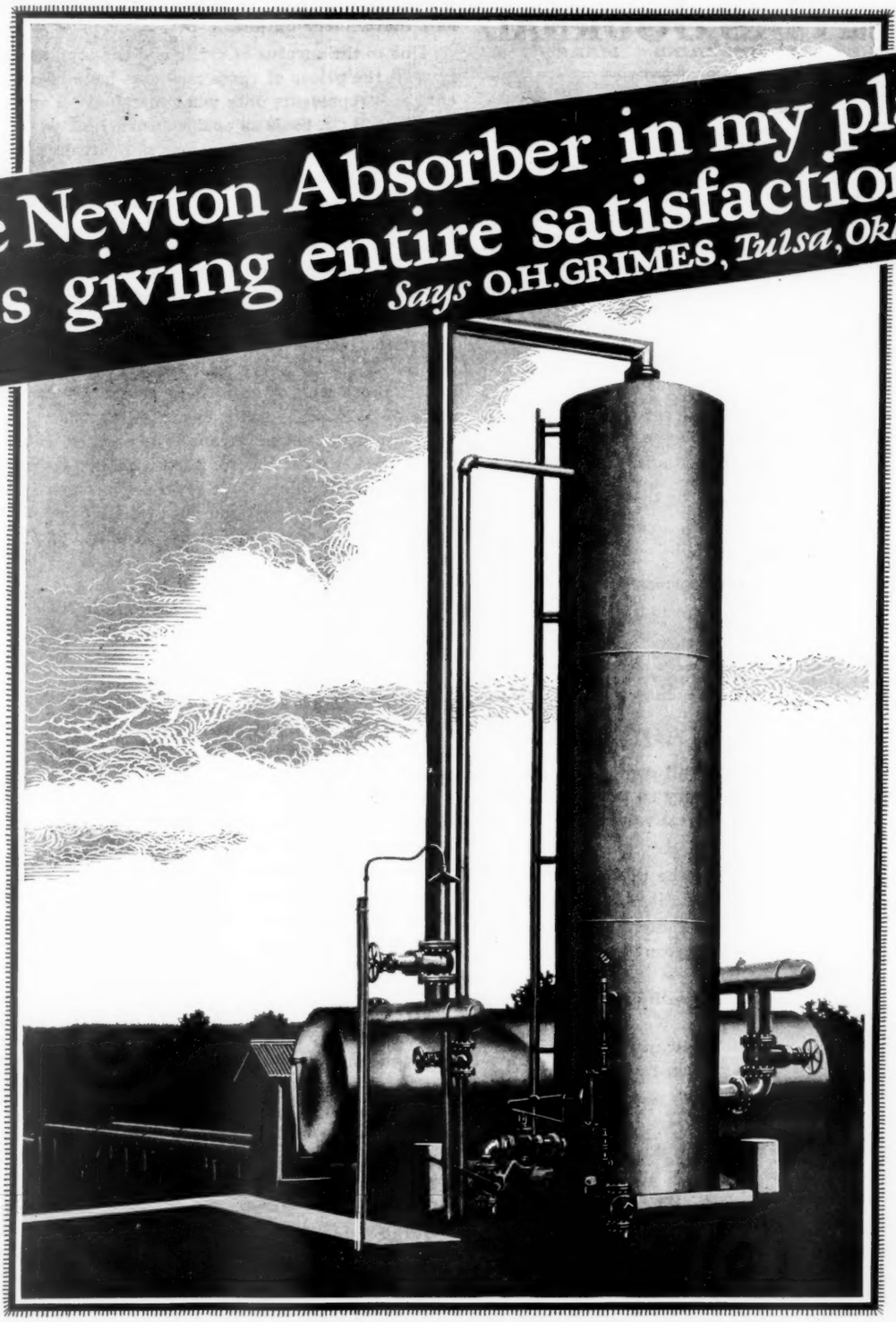
Various are the jobs which graduates of these petroleum courses take, and take gladly, as soon as the commencement exercises are over and the impressive mortar-board and gown ($1.50 for two days) have been returned to the clothing concern from which they were rented. A large percentage of them get jobs as roustabouts, in which they soon lose any academic air which they may have for-

(Continued on Page 98)

*Airplane view of campus, Missouri School of Mines, Rolla, Mo.*

# "The Newton Absorber in my plant is giving entire satisfaction"

*Says* O.H.GRIMES, *Tulsa, Oklahoma*



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## STUMBLING BLOCK TO STABILIZATION

The oil industry may talk of stabilization all it pleases but there can be no effective stabilization in the industry so long as half the product of crude oil is sold for less than its real value.

That is what is happening today.

Fuel oil, which represents 46 per cent of the products obtained from crude oil, is selling for about half what it should be worth.

It is idle to talk of developing demand for domestic heating or new markets on that basis. It would just mean that much more loss.

And this cheapened fuel oil is competing with crude as a source of gasoline.

The refiner is suffering from a ruinously low market for his bulk product and the producer's crude is kept down by the competition of cheap fuel oil as raw material for the refiner.

This condition is not new.

The total stock of gas oil and fuel oil on August 31, the last figures available, was 134,818,000 barrels. This includes some California heavy crude which the Government does not separate from refinery fuel oil. The total on August 31, 1927, had been 123,699,000 barrels, showing an increase in twelve months of 11,119,000 barrels.

Actually there was an increase of 10,865,000 barrels since the first of January this year. There has been an increase in gas oil and fuel oils every month since March. In fact, there has been an addition of 25,000,000 barrels to fuel and gas oil storage in the past two years.

Meanwhile fuel oil prices have reflected that condition. They have declined steadily in all parts of the country. Bunker C at New York dropped from $1.75 to $1.05. Oklahoma fuel oil prices, representative of the Mid-Continent, dropped from a high of $1.50 in 1926 to an average price of 60 cents, the quotation that has prevailed on the open market for several months in Oklahoma.

During the past few months when gasoline prices advanced steadily and other products strengthened their position, fuel oil prices have either dropped or stayed at the low level established early in the year.

It does not require any special investigation to know that fuel oil prices are below the intrinsic value of that product of crude oil which, over the country as a whole, amounts to approximately one-half the refinery output.

Due to the surplus of crude and the accumulations of gas oil and fuel oil the prices of those products have been reduced. The present price represents only what that fuel oil and gas oil is worth on the same B.t.u. basis as coal, or even less, without considering any of the advantages of fuel oil use which make it superior to coal.

This is because the refiners have been compelled to throw their surplus fuel oil on the market for what it would bring from the users who could afford to pay only the lowest price for it, and this lowest price established the price for the entire market, instead of having a market based on the real value of fuel oil in its preferential use by those who could afford to pay for its advantages.

In our present methods of manufacture there must inevitably be a certain fraction of the crude oil which must be handled as fuel oil, but if the industry will restrict the quantity of fuel oil produced, those who can afford to pay for its preferential use on the basis of 1926 prices will absorb all the available output. Surplus production of fuel oil means lower prices which in turn affect the whole market structure for petroleum and its products.

Mr. Teagle pointed out several years ago the relationship existing between crude oil and fuel oil as competitive sources of raw material for the production of gasoline. Modern developments in refining have resulted in larger and larger yields of gasoline by cracking the heavy fractions of crude oil.

One authority stated recently that today's fuel oil prices represent approximately but 50 per cent of the real value of that product as a source of gasoline.

It is apparent that present fuel oil prices are out of line with present crude oil schedules and also with present gasoline prices. But since fuel oil and gas oil is a direct competitor with crude oil as a source of gasoline supply it is clear that this disparity of prices cannot be continued indefinitely.

Either the price of fuel oil must come up or the price of crude oil will have to come down. There can be no effective stabilization on present conditions.

The overproduction of crude is ended with some withdrawals from storage in recent months indicating that the raw material market is in a position for higher prices providing the fuel oil situation can be remedied.

The only practical solution rests with the industry itself. It has pushed the sale of gas oil and fuel oil to the point where the prices received are away below the real value of the product.

There is only one solution and that is to restrict operations so as to get the maximum gasoline recovery from this fuel oil justified by marketing conditions, the market for crude oil and gasoline being limiting factors in just how far this can be carried out.

This action on the part of the refining industry will do two things. It will lessen the quantity of gas oil and fuel oil thrown on the market to be sold as fuel in direct competition with coal on the mere basis of B.t.u. values. This will bring about a natural price adjustment restricting the sale of these products to those users who can afford to pay higher prices than now prevailing for preferential uses in domestic heating and other purposes.

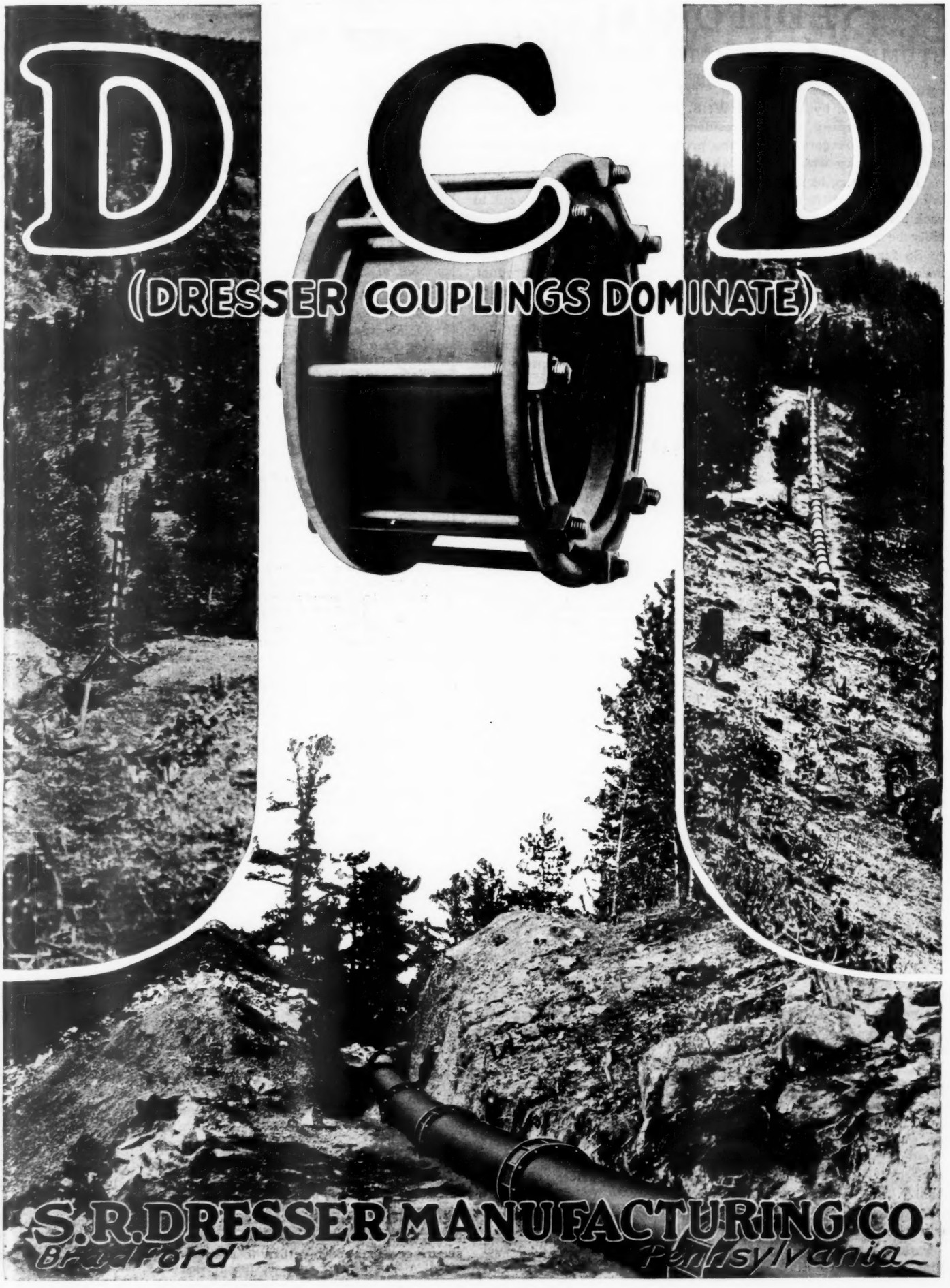
At the same time it will add to the profits of the industry directly by increasing the yield of gasoline which is still the dominant product of the industry.

While the storage of fuel oil is not subject to the losses in storing the lighter fractions, taking care of this unwieldy surplus, to which 25,000,000 barrels have been added in two years, is a heavy burden on the industry aside from the 50 per cent losses through depressed prices.

The industry cannot hope to develop markets for fuel oil in such quantities at better prices. The practical remedy is to get the maximum yield of gasoline and other light end products and thus restrict the amount to be marketed as fuel oil.

This is the only way to secure a balanced market in which the price of each product is in line with the prices for other products securing a maximum return to refinery operators and a maximum

(Continued on Page 38)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# EDITORIAL

## STUMBLING BLOCK TO STABILIZATION

(Continued from Page 36)

return to the crude oil producer. This has been the position taken by Mr. Teagle, by President W. S. Farish of the Humble Oil & Refining Company and by President R. C. Holmes of The Texas Corporation, leaders in both the producing and refining divisions of the industry who see the industry as a whole.

The industry has the equipment to carry out this program, or it is obtainable. It is the truest form of conservation, getting out of each barrel of crude all of the most valuable products that can possibly be extracted.

So far as we have fallen short of that effort the industry has been penalized by getting only half price for half of its product, and, as a consequence, seeing that cheapened product competing with crude as a base for gasoline.

The correction of that fundamental mistake will assure the refiner a fair return on his operations and by placing fuel oil at its true value benefit the crude oil market and stabilize the entire price structure.

# Late News from the Field

### OKLAHOMA

The Greater Seminole area dropped 10,000 bbls. per day in output over the week-end and on Tuesday morning of this week produced 302,834 bbls. from 1,257 wells. On Saturday morning last, the output of the Greater Seminole pools was 312,372 bbls. from 1,251 wells, and the drop was realized in spite of the completion of six additional wells.

Tuesday morning's production by pools was:

| | |
|---|---|
| Little River | 121,807 |
| Maud | 1,382 |
| Mission | 100 |
| Bowlegs | 49,624 |
| Earlsboro | 76,625 |
| Seminole | 41,942 |
| Searight | 11,354 |
| Total barrels | 302,834 |

The Amerada Petroleum Corp.'s No. 1 Hallum, NE cor. SE SE Section 1-8-4, has a showing of oil in the Hunton lime from 4,138-51 feet. This well is south of the Gravel well which the same company drilled last spring. The locality around these two wells is reported to be on a seismograph structure.

In the northwest part of the Earlsboro Pool, The Texas Company's No. 1 Rogers, SE cor. SW Section 5-9-5, has 500 feet of oil in the Wilcox sand and is shut down for orders. This well will provide a slight extension of the pool.

South of the Little River Pool, T. B. Slick, Inc.'s No. 1 Wood, NE cor. SW Section 26-7-6, was shot with 10 quarts in the Cromwell sand and is flowing 1,100 bbls. daily from 3,325-31 feet. The oil is 10 per cent water, and 6 per cent b.s., according to gauges and tests.

### GULF COAST

HOUSTON, Tex., Oct. 30. — Humble Oil & Refining Co.'s No. 2 Sugarland at DeWalt Dome which was deepened from a sand at 3,592 feet to 3,671 feet was completed Monday flowing 960 bbls. of pipe line oil. At Nash Dome, same county, Rycade Oil Corp. got a small well Monday morning coming in flowing between 75 and 100 bbls. through tubing from sand at 3,822 feet.

Sun Oil Co. unexpectedly got a good wildcat producer Tuesday when a cavity well it was drilling solely for the disposal of salt water came in flowing 700 bbls. of pipe line oil, extending production of the South Liberty Field approximately 1,000 feet north and some west. The oil is coming from a depth of around 800 feet. The hole was drilled on a location intended to have been too far upon the dome for production, and into which salt water from wells on its Mitchell lease was to have been pumped.

Union Sulphur Co.'s No. 730 fee on Sulphur Dome, Calcasieu Parish, was completed Monday flowing 1,200 bbls. of 21 gravity pipe line oil from sand at 5,709 feet. This is the deepest producer in the field.

Yount Lee Oil Co.'s No. 3 Davis, Spindletop, an old well deepened to 3,671 feet, was brought in late Monday flowing an estimated 1,800 bbls. of fluid, of which about 50 per cent was oil. This company's No. 49 Gladys City, another old well, is flowing 450 bbls. of pipe line oil from sand at 2,650 feet.

### SOUTHWEST TEXAS

SAN ANTONIO, Tex., Oct. 30.—Texas Gas Co.'s No. 2 Holmes-Heard, center Lot 2, Block 8, Refugio Townsite tract, in sand at 3,689-3,701 feet, came in Sunday afternoon and is pinched to about 750 bbls. of 23.5 gravity oil per day and is flowing through half-inch choke. It is in the north end of the field, one-quarter mile west of Larson-Walsh's Holmes-Heard which is the big gas well at 3,652 feet and is 3½ miles north of Claude Heard's No. 1, the discovery oil well at the south end of the field.

### CALIFORNIA

LOS ANGELES, Calif., Oct. 30.—Operators who opened up heavy oil production on Kern River Front are considering the advisability of shutting in again. Many inside wells have already been curtailed again but line wells are still open. Government regulations are reported to be hampering attempts to resume former status of complete curtailment.

## MAX W. BALL RESIGNS AS PRESIDENT OF ARGO

Max W. Ball has resigned as president of the Argo Oil Co. to engage in consulting practice as petroleum engineer, with offices in the First National Bank Building, Denver, and the Exchange National Bank Building, Tulsa.

From 1906 to 1917 Mr. Ball was with the Geological Survey and the Bureau of Mines, leaving the government service to take charge of Rocky Mountain activities for the Royal Dutch-Shell group. In 1921 he organized the Western Pipe Line Co., which built the first common carrier pipe line out of the Salt Creek Field. In 1922 he became president of the Marine Oil Co.-Royalty & Producers-Glenrock-Wyokans group of companies, which with the Western States Oil & Land Co. were later consolidated into the Argo Oil Co.

Mr. Ball has been active in the national geologic and engineering societies, and in 1923-24 was president of the American Association of Petroleum Geologists.

## HIGH SPOTS IN FIELD NEWS

### OKLAHOMA

*Greater Seminole declined 10,000 bbls., producing only 302,834 bbls. Tuesday morning, despite the completion of six additional wells.*

*Amerada's No. 1 Hallum, Section 1-8-4, had showing of oil in Hunton lime. In northwest of Earlsboro The Texas Company's No. 1 Rogers has 500 feet of oil in the Wilcox, a slight extension.*

*South of Little River T. B. Slick, Inc.'s No. 1 Wood is flowing 1,100 bbls., 10 per cent water and 6 per cent b.s.*

### SOUTHWEST TEXAS

*Texas Gas Co.'s No. 2 Holmes-Heard, Refugio Townsite, pinched in, is flowing through half-inch choke about 750 bbls. of 23.5 oil at 3,689-3701 feet.*

### GULF COAST

*Humble Oil & Refining Co.'s No. 2 Sugarland at Dewalt Dome, deepened, is flowing 960 bbls.*

*Rycade Oil Corp. got a small well at Nash Dome flowing 75 or 100 bbls. through tubing from sand at 3,822 feet.*

*Revival of wildcatting follows discovery of dozen new domes in Gulf Coast.*

*Sun Oil Co. drilling a cavity well for disposal of salt water at South Liberty at 800 feet struck 700 bbls. of pipe line oil, extending production 1,000 feet north and west.*

*Union Sulphur Co. at 5,709 feet got a 1,200-bbl. well at Sulphur Dome, Calcasieu Parish, Louisiana, deepest producer in the field.*

*Yount Lee's No. 3 Davis, Spindletop, is flowing 1,000 bbls. of fluid, 50 per cent oil.*

### WEST TEXAS

*Drilling campaign in south of Winkler continues. Interest is shifting to the Leck area 9 miles north of Winkler Pool.*

*Probable that allowed production from Roberts Pool may be raised 5,000 bbls. on claim of Henshaw Oil Corp. that well is from separate pay.*

### NORTH TEXAS AND PANHANDLE

*Cooke County tests are attracting attention. New pool found in Archer County. Panhandle gain increased production of North Texas and Panhandle 2,356 bbls.*

### ROCKY MOUNTAIN AREA

*Lea County, New Mexico, wells are at an interesting stage. Two Marland tests are running high. Utah tests attract notice.*

### CALIFORNIA

*Lifting of Kern River curtailment releases 10,100 bbls. daily. Operators who opened up heavy oil production there are considering advisability of shutting in again. Many inside wells have already been curtailed again but line wells are still open. Government regulations are reported to be hampering attempts to resume former status of complete curtailment.*

*New Nordstrom zone between Meyer and Buckbee zones at Santa Fe Springs.*

## TEMPERATURE DATA OF DEEP WELL INTERESTING

FORT WORTH, Tex., Oct. 27. — At the present rate of increase in temperature each 100 feet, Texon Oil & Land Co.'s record-breaking deep well in the heart of the Big Lake Field in Reagan County, will have to be drilled to 9,700 feet before the temperature at the bottom of the hole will reach 212 degrees Fahrenheit, at which temperature water boils.

Some interesting temperature tests of the deep hole were made October 18 by E. M. Hawtoff, Bureau of Economic Geology. Five of the readings taken by Mr. Hawtoff show a wide fluctuation in temperature from 5,700 feet to 8,300 feet.

The Texon company's record well was drilling below 8,390 feet according to the latest available reports from the field. The last string of casing was set arou 6,200 feet and the hole has to be bail every few days. Oil was found arou 6,200 feet but no water has been e countered below that depth.

Below are given in tabular form fi of the readings:

| | |
|---|---|
| 5,700 feet | 122 degre |
| 6,500 feet | 135 degre |
| 7,000 feet | 152 degre |
| 8,000 feet | 161 degre |
| 8,300 feet | 170 degre |

### SHELL PIPE LINE STATEMENT

The Shell Pipe Line Corp.'s statem of operations for September shows ru from Oklahoma, Kansas and Texas of 3 564,355.44 bbls. and shipments of 3,29 749.38 bbls.

### WIFE OF OIL MAN DIES

FORT WORTH, Tex., Oct. 27.—Mr Marie Smith, wife of P. R. Smith, ma ager, Pure Oil Co.'s Arkansas divisio died in a Fort Worth hospital today fo lowing an illness of several weeks' dur tion. The body was sent to Phillip burg, N. J., for burial.

# Wichita Falls Area Leads North Texas

## Cooke County Back Into Prominence While Archer County Gets Another Pool. Panhandle Increases Production Total

By James H. Dameron
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., Oct. 29.—Cooke County in the Wichita Falls district is back in prominence after being in the background for months and tests there proved to be among the most noteworthy in North Texas. In addition to the Cooke County developments Wichita district got another pool in Archer County and was the most active district in North Texas.

A 2,356-bbl. increase in daily average production was registered in North Texas and the Panhandle due wholly to a big increase in Panhandle. Wichita Falls and Ranger districts both showed declines, the former a 482-bbl. drop and Ranger was off 37 bbls.

Coming first in Cooke County developments was Stoneman and associates' No. 1 Poteet, J. L. Stephens Survey, Abstract No. 1,001, which gave the Bulcher Pool a three-quarter-mile southwest extension. It had the Hoosier sand at 1,302-71 feet and is estimated to be a 50-bbl. well. The oil tested 35 gravity corrected.

Probably of more importance was the discovery in Powell Oil Co.'s No. 1 Dennis, A. A. Pope Survey, Abstract No. 18, which has 1,000 feet of 32 gravity oil in the hole from sand at 1,549-55 feet. This sand is probably below the Hoosier and if so will cause the deepening of several Hoosier sand tests in that section which have been abandoned.

Few tests in that section have been drilled below the Hoosier sand and completion of a well in sand below the Hoosier will no doubt result in the exploration of that zone in the old wells in the Bulcher Pool. The Powell company's well is a mile west of the Stoneman and associates' well. It had a show of oil at 1,479-81 feet. It is estimated to be 15 or 20-bbl. well.

### New Pool in Archer

Archer County's new pool was opened by John Turner and associates' No. 1 D. Lyles, located 1,475 feet west and 50 feet south of the NE cor., Section 7, Cooper and Wade Survey, which swabbed 90 bbls. from sand at 1,685-91 feet. It is in the center of a group of dry holes and the pool is not expected to be very large at best.

The well is 6 miles southwest of Mankins and is being put on the pump. It is the outstanding development of the county which reported an unusual number of dry holes during the week.

Foard County was back into prominence when Fain and McGaha Corp.'s No. 3 Matthews, Section 3, G.C.&S.F. Survey, Abstract 117, found 4,000,000 cu. ft. of dry gas in sandy lime at 867 to 940 feet. Bottom of the hole is 940 feet.

Field operations in the Wichita Falls district continued to drag because of the shortage of water. Wilbarger County is particularly hard hit and around 90 per cent of the operations in that county are shut down because of the water shortage. Some of the operations are being carried on with gasoline engines. Two good wells were completed in the Greyback pool and will build up the tottering production of that flush area. Of more importance, however, was the find in East-Oil Co.'s No. 1 Waggoner, Section 26, Block 4, which may link up production between Greyback and the Rock Crossing Pool to the west.

That well had sand at 2,330-38 feet and swabbed better than 400 bbls. It is a mile west of The Texas Company's flush lease in the north part of the Greyback Pool. The well is scheduled for completion during the coming week.

### Greyback Pool

In Greyback, Waggoner Refining Co. completed another good well on its "I" lease. No. 4 made 1,500 bbls. initially from sand at 2,389 to 2,406 feet. In the same pool, Fain and McGaha Corp.'s No. 12-S flowed and swabbed 750 bbls. the first 24 hours from sand at 2,292 to 2,301 feet and 2,384 to 2,423 feet.

It is reported in various circles that Phillips Petroleum Co. is on a deal to buy extensive holdings in the Consolidated Pool which is southeast of the Greyback Pool. The report was not verified. Production of the Consolidated Pool is around 5,000 bbls. and according to the reports Phillips company contemplates purchase of the best holdings in the pool.

Phillips Petroleum Co.'s No. 2 Davidson-Myson, Section 87, Block B-2, Gray County, proved one of the most interesting wells in the Panhandle. The well was an old 20-bbl. pumper at a total depth of 3,074 feet and producing from granite wash pay at 3,060-71 feet. During the week it was cleaned out and on a swab test it made 1,824 bbls. The next 24 hours it flowed 110 bbls. and then fell off rapidly, finally going dead Friday night. Paraffin trouble was attributed as the reason for the well ceasing to flow. Its big increase is believed to have been brought about by deepening while cleaning out and finding a crevice or soft spot in the granite wash.

### Gain in Panhandle

Panhandle showed a sharp gain in production due mainly to the new flush brought in from Gray County. Moore County made another gain as Skelly Oil Co.'s No. 3 Armstrong and Byrd continued to improve in production. In that section Dixon Creek Oil Co.'s first test to get the lime topped it at 2,275 feet, the same depth at which it was found in Skelly company's well. Moore County continues to have a small but steady acreage play and another test was spudded in the county. However, that well was shut down for litigation.

The South Plains territory continues to be one of the most active districts in Texas so far as leasing is concerned. Several companies have had geophysical parties working in that territory, especially where it borders into the West Texas area.

Little excitement was reported from the Ranger district. Production there was constant due to the fact that Continental Oil Co. and associates' No. 1 Overall, near Coleman in Coleman County, is holding remarkably close to its initial production.

### ESTIMATED DAILY AVERAGE PRODUCTION—NORTH TEXAS

**Week Ending October 27**

| Panhandle district— | Bbls. |
|---|---|
| Carson County | 6,075 |
| Gray County | 28,670 |
| Hutchinson County | 30,735 |
| Moore County | 2,135 |
| Potter County | 20 |
| Wheeler County | 845 |
| Total this week | 68,480 |
| Total last week | 65,605 |
| Increase | 2,875 |
| Wichita Falls district— | |
| Archer County | 19,571 |
| Baylor County | 100 |
| Clay County | 482 |
| Cooke County | 2,253 |
| Jack County | 1,557 |
| Montague County | 8,019 |
| Throckmorton County | 766 |
| Wilbarger County | 31,722 |
| Young County | 8,541 |
| Wichita County | 26,197 |
| Total this week | 99,208 |
| Total last week | 99,690 |
| Decrease | 482 |
| Ranger district— | |
| Brown County | 10,889 |
| Callahan County | 3,556 |
| Coleman County | 4,133 |
| Comanche County | 1,340 |
| Palo Pinto County | 415 |
| Ranger | 5,934 |
| Shackelford County | 10,685 |
| Stephens County | 7,694 |
| Total this week | 44,646 |
| Total last week | 44,683 |
| Decrease | 37 |
| Grand total this week | 212,334 |
| Grand total last week | 209,978 |
| Increase | 2,356 |

### PANHANDLE COMPLETIONS

**Week Ending October 27**

**Gray County**

Perkins & Cullun's No. 1 Saunders, Section 4, Block 1 B.S.&F. Survey, made 37,000,000 feet of gas at 2,270-2,565 feet. Roxana Petroleum Corp.'s No. 1 Lester, Section 1, Block 1, A.C.H.&B. Survey, was shot with 20 quarts at 2,501-15 feet and had an initial production of 270 bbls. from the granite wash 2,502-04 feet. The Texas Company's No. 4-A Chapman, 990 feet north and 330 feet from the west line of Section 51, Block 25, was plugged at 2,995 feet. Delaney and others' No. 6 Jackson was drilled to a total depth of 3,086 feet, plugged back to 3,030 feet, was shot with 60 quarts at 3,010-25 feet and made 40 bbls. The Texas Company's No. 6 Saunders made 2,845 bbls. at 2,653-55 feet.

**Hemphill County**

Gageby Oil Co.'s No. 1 Burnell Brothers, 999 feet from east line and 330 feet from south line of SE Section 38, Block M-1, H.&G.N. Survey, was dry and abandoned at 700 feet.

**Potter County**

Canadian River Gas Co.'s No. 1 William Bush was drilled to a total depth of 3,687 feet, plugged back to 3,630 feet and made 2,500,000 feet of gas at 3,228-3,560 feet.

**Wheeler County**

Canadian River Gas Co.'s No. 1 Williams & Laycock, 330 feet from NE cor. Section 2, Block 27, H.&G N.R.R. Survey, made 42,000,000 feet of gas at 1,830-1,960 feet.

### WICHITA COMPLETIONS

**Week Ended October 27**

**Archer County**

Brown & Hickey's No. 2 Wallace was dry and abandoned at 1,118 feet. B. I. Carter's No. 2 Parkey-C location was abandoned. Empire Gas & Fuel Co.'s No. 1 Wilson-H was dry and abandoned at 1,509 feet. H. Hines and others' No. 1 Wilson was dry and abandoned at 1,605 feet. Humble & Gohlke's No. 1 Wilson was dry and abandoned at 1,600 feet. D. O. Johnson and others' No. 5 Wilson-A was dry and abandoned at 1,581 feet. Shappell Oil Co.'s No. 42 Jackson made 15 bbls., 10 per cent water, at 1,791-95 feet. The Texas Company & Hines' No. 1 Wilson was dry and abandoned at 1,553½ feet. The location was abandoned on Thomas and others' No. 1 Brown. Consolidated Oil Co.'s No. 3 Neimeyer was dry and abandoned at 1,440 feet. Freeman & Grebin's No. 1 Henning was dry and abandoned at 1,503 feet. C. W. Gilliland's No. 7 Neimeyer made 125 bbls. at 1,401-09 feet. His No. 2 Road made 10 bbls. at 1,251-66 feet. Madden & Hunt's No. 7 Richardson was junked at 1,317 feet. His No. 8 Richardson made 60 bbls. at 1,307-16 feet. His No. 10 Richardson was dry and abandoned at 1,364 feet. Marland & Consolidated's No. 1 Ward-B was temporarily abandoned at 1,038 feet. Panhandle Refining Co. and others' No. 6 Prideaux-C made 7½ bbls. at 647-70 feet. Prairie Oil & Gas Co.'s No. 1 Richardson-E was drilled to a total depth of 1,299½ feet, plugged back to 1,298 feet, encountered an oil show 1,290-99½ feet and made 75 bbls. oil and 2 bbls. of water. The Texas Company's No. 7 Hayter made 17 bbls. at 1,425-30 feet. Its No. 8 Hayter made 29 bbls. at 1,404-17 feet. Underwood Drilling Co. and others' No. 6 Ward was dry and abandoned at 1,085 feet.

**Cooke County**

Green & Skelly Oil Co.'s No. 1 Ball made 8 bbls. at 746-56 feet.

**Montague County**

Pure Oil Co.'s No. 9 Loy and others made 12 bbls. at 785-810 feet.

**Throckmorton County**

Reiter-Foster Oil Corp.'s No. 1 Parrott was dry and abandoned at 1,326 feet.

**Wise County**

Boonville Oil Co.'s No. 1 Carter was temporarily abandoned at 1,362 feet.

**Wichita County**

Magnolia Petroleum Co.'s No. 139-H Reilly was dry and abandoned at 2,100 feet. Its No 140-H Reilly made 12 bbls. at 1,595-1,606 feet. Comac Drilling Co.'s No. 1 Sam Kelly and others was dry and abandoned at 1,853 feet. Harry Hines and others' No. 9 Waggoner Brothers made 101 bbls. in 21 hours at 1,374-1,404 feet. W. B. Omohundro's No. 17 J. R. Pace made 89 bbls. at 1,226-30½ feet. Panhandle and others' No. 1 W. H. Barton was dry and abandoned at 1,805 feet. Vergate Oil Co.'s No. 6 Kemp & Kempner was dry and abandoned at 1,080 feet.

**Wilbarger County**

Barton's No. 1 Waggoner-E was dry and abandoned at 1,930 feet. Consoli-

(Continued on Page 133)

### TEXAS PANHANDLE WILDCATS

**Week Ended October 27**

**CARSON COUNTY**

| Company, Well, Farm, Name, Section and Block— | Remarks— |
|---|---|
| Beaudain et als' No. 1 Barnard, 330 ft. from N. and E of E 80 acres, SE, Sec. 24, Blk. 4, I.&G.N. Sur. | Rig. |
| Denson et als' No. 1 W. E. Cobb, 930 ft. from N line, 280 ft. from E line, W ½ NW, Sec. 184, Blk. 2, I.&G.N. Sur. | S.D. 725 ft. |
| Empire G. & F. Co.'s No. 1 J. J. Crutchfield, 1,320 ft. from S and W lines, Sec. 28, Blk. 4, I.&G.N. Sur. | Drlg. 2,400 ft. |
| Magnolia Pet. Co.'s No. 6 fee No. 244, 660 ft. from N line and 660 ft. from E line of E ½, Sec. 91, Blk. 4, I.&G.N.R.R. Sur. | Spud. |
| Morris et als' No. 1 Barnard, NW cor. SW SE, Sec. 44. | S.D. 400 ft. |
| Navajo Oil Co.'s No. 2 Poling, 660 ft. from W and 330 ft. from N lines, N 30 acres SW, Sec. 22, Blk. X-2, T.T.R.R. Sur. | S.D. 1,950 ft. |
| Reynolds et als' No. 1 E Cooper, 330 ft. from S line and 330 ft. from E line of NW, Sec. 5, Blk. 9, I.&G.N. R.R. Sur. | S.D. 260 ft. |
| Spartan Oil Co.'s No. 1 S. Bednorz, NW cor. E ½ NW, Sec. 202, Blk. 3, I.&G.N. Sur. | Spud. |
| Stubblefield et als' No. 1 Cooper, 340 ft. N and 330 ft. W line SE, Sec. 5, Blk. 9 | Drlg. 400 ft. |
| Travis et als' No. 1 D. A. Harrell, C NE NE, Sec. 162, Blk. 7, I.&N.G. Sur. | Fish. 2,410 ft. |
| Ware et als' No. 1 Ware, 990 ft. S and 400 ft. E of NW cor. Sec. 18, Blk. 3, A.B.&M. | Location. |
| **CASTRO COUNTY** | |
| Colorado O. & R. Co.'s No. 1 M. Siemmons, SW cor. Sec. 73, Blk. M-17, B.S.&F. Sur. | Rig blown down. |
| Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. | S.D. 510 ft. for csg. |

(Continued on Page 59)

# Freak Well in Winkler County Field

## Drilling Campaign in O'Brien Pool. May Raise Allowed Production in Roberts Pool on Henshaw Claim. New Interest in Leck

By James H. Dameron
*Fort Worth Bureau, The Oil and Gas Journal*

FORT WORTH, Tex., Oct. 29.—A freak well in Winkler County and wildcat tests over the far-flung areas of the Permian Basin kept developments clicking with regularity throughout the past week. Production showed a decline, although small, but an increase in crude going to storage was reported.

Winkler County's freak well, Atlantic Oil Producing Co. and J. D. Collett's No. 13-F Hendricks, Section 40, Block 26, found production at 1,050 feet and made around 4,000 bbls. of fluid, 50 per cent water, before being closed in. Although the production was found approximately 2,000 feet higher than the main pay in the Hendricks Field, it is generally conceded that no new pay horizon has been found.

The freak producer is 100 feet south of No. 3 Hendricks-F. In addition to having the jinx number 13, the well found the pay on Friday. It was drilled originally to find a cavern which was found around that depth in No. 3 and was to be used to pump water into. No. 3 had a big cavern at approximately this depth, and the returns were lost. When it was found necessary to build a water disposal plant for the lease, it was decided to drill a hole to this depth and pump the water into the crevice as is done in several instances in the field.

But when the cavern was drilled into, the well started making gas and blew the fluid over the crown block. Friday the well blew the control head off and it was ignited by the boiler fire. The fire was extinguished the following day and the well brought under control. The owners are preparing to cement pipe and produce the well.

Geologists are of the opinion the production has found its way up through crevices from other wells. Bad cementing jobs in several wells in the pool have permitted the oil from the lime to go up behind the casing and migrate and they do not expect it to be a surprising event if several such wells are found in the pool.

### O'Brien Pool

In the south part of Winkler County the small drilling campaign in the O'Brien Pool is moving along briskly. The discovery well, Sid Richardson and associates' No. 1 Stockton, Section 50, Block F, is not holding to its original production. Friday the well flowed 1,105 bbls., 12 per cent water, and on the following day it made 1,046 bbls., 12 per cent water. The water is bottom hole water and the well is being agitated. Total depth of the hole is 2,973 feet.

Interest is shifting to the Leck district, 9 miles north of the pool, where two wells have been completed. A small sized drilling campaign is under way in that part of the county. Atlantic, Kessler and Logan's No. 2 Lum Daugherty, NE cor. N half SW Section 3, Block 74, topped the lime at 2,622 feet and has a surface elevation of 2,894 feet.

This makes the lime top 272 feet above sea level. It makes the well 70 feet higher structurally than the Empire Gas & Fuel Co.'s 130-bbl. per hour well. Half a dozen new locations were made in the Leck area during the past week.

Southwest of the O'Brien Pool in the southern part of the county, Prairie Oil & Gas Co.'s No. 1 Sealy, C SW Section 95, Block A, Ward County, was drilling at 2,695 feet with no increase in the 5,000,000 feet of sulphur gas found at 2,526-75 feet. Saturday the well was reported to have topped the lime at 2,675 feet, 9 feet below sea level, but at 2,695 feet the cuttings showed some anhydrite.

### Howard County Tests

Over in Howard County two of the outpost wells on the north and northeast sides of the Roberts Pool showed up good on tests, but a test to the south apparently has defined the pool in that direction. The latter well is Cosden & Co.'s No. 1 Dora Roberts-E, NW cor. SE Section 157, Block 29, on a 30-acre lease. At 3,035-41 feet the well made 11 bbls. of oil and 1 bbl. of water, but when deepened it had a hole full of water at 3,052-53 feet. It has been shut down and will probably be plugged. Two other wells over east were good for 200 bbls. each on the pump.

In the northeast corner of the pool, Amerada Petroleum Corp. and Rycade Corp.'s No. 1 Roberts, SW cor. N half NE Section 137, Block 29, swabbed and flowed at the rate of 178 bbl. per hour on a three-hour test. Pay record is 2,933-78 feet. Offsetting this well to the south, Schermerhorn Oil Co.'s No. 2 Dora Roberts-B, flowed and swabbed 1,740 bbls. in 12 hours and is being equipped to pump.

Going over northwest, Cosden & Co.'s No. 4 Dora Roberts-A, SE cor. Section 129, Block 29, made 1,000 bbls. on a 12-hour swab test and did not show any water. It had the pay at 3,061-73 feet.

About a quarter of a mile north of the Henshaw Oil Corp.'s sensational well in Section 6, Block 32, Taylor Link Oil Co.'s No. 1 Kloh-Rumsey, Section 3, was one of the most disappointing wells in southern Howard County. At 2,389 feet the bit encountered one bailer of salt water per hour. Before drilling into the water the well was disappointing on a swab test after standing three days. It will be plugged back and the showings found from 2,260 to 2,357 feet will be shot with 200 quarts. Louisiana Oil & Refining Corp.'s test in the same section is also running low and has helped to throw cold water on that area.

Humble Pipe Line Co. has completed its line lateral extending from its double 8-inch line running from Kemper to Comyn station, which will tap the Roberts Pool. The line was built from San Angelo station to a station in the Roberts Pool. Humble company has made connections on the F. H. E. Oil Co.'s B lease in Section 137, Block 29, and is seeking other connections.

### May Raise Roberts Pool

Texas Railroad Commission may raise the allowed production of the Roberts Pool 5,000 bbls. to afford temporary relief for the Henshaw Oil Corp., which seeks to have its 2,200-foot pay well prorated under a separate order. Henshaw corporation contends it has a well producing better crude than the deeper Roberts Pool wells and is entitled to a better price than the 65-cent posted price.

Many operators in the Roberts area supported the Henshaw corporation contention, and the 5,000-bbl. increase may be made in the allowable production of the pool to give the Henshaw corporation an opportunity to develop a market for its 305-bbl. per hour well in Section 6, Block 32. A special ruling will probably be made without changing the proration program.

Fuhrman Petroleum Co.'s No. 1 Padgett, CNL Section 17, C. S. White Survey, Crockett County, and about 15 miles southwest of the Yates Pool, appeared in the picture when it found a showing of heavy oil. The show was found in lime at 1,771-84 feet and is estimated to be good for one-third bailer per hour. Late reports from the field reported the well drilling hard gray lime at 1,812 feet with no increase.

### Jones County

North of Noodle Creek in Jones County, Snowden & McSweeny's No. 3 Bickley, SE cor. NE NW Section 50, Block 18, T.P. Survey, held the center of the stage in that territory. The well made 1,200 bbls. initial from pay at 2,473-79 feet. This well is the south offset to No. 1 on that lease, and although higher structurally it does not have sufficient gas to flow it. No. 1 is pumping 700 bbls. daily. It is believed No. 1 exhausted the gas pressure.

In the Tiner Pool north of Noodle Creek, Roeser & Pendleton's 300-bbl. well, Section 13, Block 18, offsetting Roberts and Cosden & Co.'s No. 5, was a surprise because it was believed No 5. had defined the pool. No. 5 was only a small well in the Noodle Creek pay.

Production of West Texas showed a small decline despite the gains in Howard County and the Yates Pool. Yates Pool production was up to 73,260 bbls., and the Roberts Pool sent Howard County to a new peak of 31,841 bbls. Hendricks was down considerably and, coupled with losses in other counties, West Texas as a whole showed a small decline.

**ESTIMATED DAILY AVERAGE PRODUCTION—WEST TEXAS**
**Week Ending October 27**

| County— | Wells | Bbls. |
|---|---|---|
| Crane County | 268 | 40,560 |
| Crockett | 49 | 2,862 |
| Ector | 2 | [illegible] |
| Fisher | 5 | 920 |
| Howard | 209 | 31,841 |
| Jones | 43 | 3,528 |
| Loving | 6 | 240 |
| Mitchell | 141 | 2,488 |
| Pecos | 268 | 73,620 |
| Reagan | 224 | 17,781 |
| Runnels | 3 | 310 |
| Scurry | 5 | 31 |
| Upton | 293 | 14,402 |
| Winkler | 412 | 144,230 |
| Total this week | 1,928 | 332,853 |
| Total last week | 1,885 | 334,648 |
| Difference | | 1,795 |

### WEST TEXAS COMPLETIONS

#### Edwards County

Magnolia Petroleum Co.'s No. 2 Whitehead, 2,640 feet from north and 1,320 feet from west Section 88, Block D, G. C.&S.F.R.R. Survey, was dry and abandoned at 2,190 feet.

#### Howard County

Henshaw Oil Corp.'s No. 1-A Settles, 1,424 feet from north and 1,905 feet from west line, Section 6, Block 32, Township 2s, T.&P. Survey, topped the lime at 2,001 feet, topped the pay at 2,210 feet, was drilled to a total depth of 2,245 feet and had an initial production of 4,226 bbls. Hyer & Yates' No. 1 Clay, 330 feet from north and 2,310 feet from east line of Section 155, Block 29, W.&N.W. Survey, had an initial production of 120 bbls. at 1,807-30 feet. Magnolia Petroleum Co.'s No. 10 Dora Roberts, 2,310 feet from south and 330 feet from west line of Section 136, Block 29, W.&N.W.R.R. Survey, had an initial production of 900 bbls. at 2,947-77 feet. Marland Oil Co.'s No. 9-A Clay, 250 feet from north and 1,470 feet from west line of Section 139, Block 29, W.&N.W. Survey, was shot with 20 quarts at 1,768-85 feet and had an initial production of 45 bbls. daily. Marland Oil Co. No. 2-G Clay, 250 feet from south line and 1,470 feet from west line, Section 126, Block 29, W.&N.W. Survey, topped the pay at 1,781 feet, was shot with 20 quarts at 1,781-99 feet and had an initial production of 35 bbls. Marland-Texon's No. 2-A Settles, 330 feet from north and east, Section 158, Block 29, W.&N.W. Survey, topped the pay at 2,965 feet, topped the lime at 2,075 feet and had an initial production of 2,200 bbls. at 3,029 feet. Midwest Exploration Co.'s No. 2 Henry, 250 feet from north and 1,0[illegible] feet from west line, Section 139, Block 29, W.&N.W. Survey, topped the pay at 1,759 feet, was drilled to a total depth of 1,789 feet, was shot with 40 quarts at 1,771-83 feet and had an initial production of 75 bbls. Schermerhorn's No. 2-A Dora Roberts, 1,650 feet from north and 2,310 feet from east line of Section 137, Block 29, W.&N.W. Survey, topped the pay at 2,915 feet, and had an initial production of 1,730 bbls. daily at 2,915-78 feet.

#### Jones County

Campbell & Clark's No. 1 Dickins was dry and abandoned at 2,542 feet after having encountered an oil show at 2,537-38 feet and a hole full of water at 2,538-42 feet. Roberts Oil Corp.'s No. 4 J. H. Grayson was drilled to a total depth of 2,538 feet and made 25 bbls. after having been plugged back to 2,[illegible] feet. Roeser & Pendleton's No. 2 Grayson swabbed 250 bbls. at 2,523-37 feet.

#### Pecos County

Humble Oil & Refining Co.'s No. 1[illegible]

(Continued on Page 133)

## WILDCAT OPERATIONS IN WEST TEXAS

**Week Ended October 27**

**ANDREWS COUNTY**

| Company, farm and location— | Remarks— |
|---|---|
| Deep Rock Oil Co.'s No. 1 Hostetler, 2,310 ft. N and W of SE cor. Sec. 20, Blk. A-46 | Spudded and shut down |

**BORDEN COUNTY**

| | |
|---|---|
| Condor Oil Co.'s No. 1 E. A. Hall, 1,650 ft. S and W of NE cor. Sec. 5, Blk. 32, Twp. 3n. T.&P. Sur. | Drlg. 620 ft. |
| E. L. Doheny, Jr., No. 1 J. J. Koonsman, 330 ft. S and E of NW cor. Sec. 2, Blk. 2, T.&N.R.R. Sur. | Hole full water 290-360 ft.; shut down 3,210 ft.; hole full water 3,050-85 ft. |
| Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur. | Location |

**BREWSTER COUNTY**

| | |
|---|---|
| Brewster Oil Co.'s No. 1 fee, 2,640 S and 2,598 E of NW cor. Sec. 45, Blk. G-15, G.C.&S.F. | Location |
| Cowden & Bowser's No. 1-A Jackson & Harmon, Sec. 1, Blk. 331, T.C.R.R. Sur. | Shut down 1,500 ft. |
| Forrest Oil Co.'s No. 1 Skinner, C SW SE Sec. 100 Blk. 2, G.C.&S.F. Sur. | Shut down 1,145 ft. |
| J. M. Hickey's No. 1 Jackson & Harmon, NE cor. Sec. 182, Blk. 9, G.H.&S.A. Sur. | Shut down 1,079 ft. |
| Reese & White's No. 1 Kimbale, C NE Sec. 204, Blk. 9, G.H.&S.A. Sur. | Shut down 2,009 ft. |
| Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 mi. S of Alpine | Shut down 1,710 ft. |
| Williams and others' No. 1 Poncey, 459 ft. S and 1,062 ft. E Sec. 26, Blk. 214, T.&St.L.R.R. Co. | Shut down 500 ft. |

**COKE COUNTY**

| | |
|---|---|
| Cates & Dennis' No. 1 Mimms, 2,500 ft. S and 330 ft. E of NW cor. Sec. 47, Blk. 4, T.&P. | Shut down 600 ft. |
| Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T.C. Sur. elev. 2,750 ft. | Straightreaming 2,836 ft. |
| Louisiana O. & R. Co.'s No. 1 Powers, 745 ft. S and 2,310 ft. E of NW cor. Sec. 156, Blk. 2 | Drlg. 2,115 ft. |
| Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor. Sec. 272, Blk. 1-A, H.&T.C. | Drlg. 920 ft. |

(Continued on Page 61)

During the first seven months of 1928 the only petroleum products, the stocks of which increased, were fuel oil and gas oils Every other cut has been bringing a rising price

This has made conditions "to order" for the refiner equipped with Dubbs Cracking Process He has fed his fuel oil to the Process and obtained the highest possible yields of good premium gasoline, salable, in this present market, at a profitable price, with only coke as a by-product

Universal Oil Products Co
Chicago, Illinois

Dubbs Cracking Process
Owner and Licensor

# Quiet Week for Most Oklahoma Fields

## Cromwell Sand Well in South End of Little River May Develop Pool. Shallow Well for Kiowa County

By J. L. Dwyer
*Staff Correspondent, Oklahoma Fields*

In a week during which there were comparatively few important wells completed, the only problem in reporting the activity in the Oklahoma fields was to observe the decline in the older pools of Seminole, the new locations which were staked in the Mission area of Seminole, and the increase in the water in the St. Louis Pool of Pottawatomie County. The latter was accompanied by a decline in the older wells of the field, although fresh completions of a minor output helped hold the average of the field.

The Seminole City, Searight, Bowlegs and Earlsboro Pools now offer a few wells each week which are plugged and abandoned, having reached the economic limit of production when profits fail from the output of the well. The efficacy of the air-lift equipment has undoubtedly been responsible for this, and has produced the recoverable oil in a comparatively short time. This must not be taken as indicative that the fields will have any more rapid rate of decline, for the bulk of the production in the pools mentioned above is sufficient and of a nature stable enough to offer a settled output for a considerable period, but a few wells continue to be plugged each week.

The Greater Seminole area registered another decline last week with no new wells to offer any arresting influence. The only spot which can offer any new production which might immediately stop this decline is the northeast extension of the Earlsboro Pool, and the initial production of the wells which have been completed in this small spot during the past few weeks has been rather disappointing, and was not large enough to stem the drop which the older wells of the pool registered.

### Maud Region

In the north and west side of Township 8-5, the Maud region, there has been some reluctance by the lease owners to start any appreciable amount of new work. The fact that the majority of the wells which are producing in this region are making their oil from the Hunton lime and the Simpson sand are the chief reasons why drilling has not been given a greater stimulus in this territory. The Hunton and the Simpson, while affording wells of good output, have generally been confined to pools which cover only a limited area, and there is a rather general feeling that the 8-5 country may offer a repetition of the former type of Hunton and Simpson Pools.

### Mission Area

The Mission area west of the Bowlegs Pool is increasing in interest and the operators in that area continue to make a few new locations each week. The lease owners have agreed that November 15 shall be taken as the date upon which drilling may be started in this area, and there are now 47 active locations in the Mission area. The locations which have been announced to date follow:

| Company— | Loc. | Sec. |
|---|---|---|
| Tidal Oil Co. | 1 | 12-8-5 |
| Twin State Oil Co. | 1 | 12-8-5 |
| Independent Oil & Gas Co. | 4 | 1-8-5 |
| Gypsy Oil Co. | 2 | 1-8-5 |
| Gypsy Oil Co. | 3 | 5-8-6 |
| Gypsy Oil Co. | 8 | 6-8-6 |
| Gypsy Oil Co. | 13 | 7-8-6 |
| Independent Oil & Gas Co. | 4 | 7-8-6 |
| Twin State Oil Co. | 2 | 6-8-6 |
| Minnehoma Oil Co. | 3 | 7-8-6 |
| Continental Oil Co. | 2 | 8-8-6 |
| Gypsy Oil Co. | 4 | 8-8-6 |
| Total | 47 | |

### Little River

Except for the wildcat well of T. B. Slick in the south end of the Little River Pool there was no interesting news from that area. The Slick well is No. 1 Wood, NE cor. NW Section 26-7-6, which was a failure in the Wilcox sand and which when plugged back to the Cromwell sand was reported last week as flowing about 40 or 50 bbls. an hour which was cut some by water. It now seems to be pretty well established that some of the trouble was caused by the casing which allowed some water to reach the sand. An inspection of some logs of wells drilled in the south end of the Little River Pool reveals the fact that there were a good many showings of oil in the Cromwell sand in this territorry, and it is quite pssible that some production may result from this horizon. It is doubtful if the development of a Cromwell sand pool in this region will ever reach a large peak.

### St. Louis Pool

The St. Louis Pool exceeded its former peak by a slight margin one day last week when it made 130,338 bbls. The increase was lost the next day and on Monday of this week the pool produced 124,820 bbls. The water situation in this pool is interesting, and one of the best wells in the pool is now making 85 per cent water. The encroachment of water increases right into the main body of production, and it is now apparent that the big Wilcox sand production will not extend any farther than one-quarter of a mile in any direction from the 160 acres covering the southeast quarter of Section 19-7-5. There may be isolated cases which will prove exceptions to this rule, but the bulk of the St. Louis Wilcox sand production must be assumed as coming from the territory outlined above.

The most recent event is the Magnolia Petroleum Co.'s No. 2 H. E. Youts making a large quantity of water. This well is just across the fence from the Independent Oil & Gas Co.'s Youts lease, and the water has an important bearing on the possibility of an east extension to the pool. The east side of the pool does not look so promising for good production on account of the water in the Magnolia well.

### Air Lift at St. Louis

The air lift method of producing oil at St. Louis is now used on 23 wells of the pool. The significant feature of this method is that the tubing has been lowered until it is now rather close to the bottom of the hole. This has been the practice in the older Seminole pools. When the air lift is first applied, the wells usually have a good column of oil standing in the hole. As the lift works, the column is reduced, and when the oil refuses to come into the hole, the lift is removed, and the wells are put on the pump. It is apparent from the rapidity with which the tubing is being lowered at St. Louis, that the time is not very far distant when many of the good wells will be on the pump.

The production of the Wilcox wells at St. Louis on Monday morning, October 29, is given below:

| | |
|---|---|
| Barnsdall Oil Co.: | |
| 1 Stahl | 1,190 |
| Gypsy-Sinclair and others: | |
| 1 and 2 Stahl | 10,688 |
| Phillips Petroleum Co.: | |
| 2 Stahl | 4,417 |
| 3 Stahl | 1,325 |
| Sinclair Oil & Gas Co.: | |
| 1 Nadash | 1,936 |
| Magnolia Petroleum Co.: | |
| 1, 2, 3 and 4 Hembree | 3,624 |
| 1, 2, 3, 4 and 5 H. E. Youts | 11,929 |
| 2 C. A. Youts | 280 |
| 1 T. Fyke A | 241 |
| 1 T. Fyke B | 1,422 |
| T. B. Slick, Inc.: | |
| 1 Hembree | 5,685 |
| 2 Hembree | 4,275 |
| 3 Hembree | 4,745 |
| 4 Hembree | 4,866 |
| 1 Youts | 226 |
| 2 Youts | 3,626 |
| Mid-Continent Petroleum Corp.: | |
| 1 Guinn | 2,226 |
| Independent Oil & Gas Co.: | |
| 1 Youts | 5,685 |
| 2 Youts | 455 |
| 3 Youts | 3,733 |
| 4 Youts | 3,045 |
| 5 Youts | 5,899 |
| 6 Youts | 1,275 |
| 7 Youts | 1,845 |
| 8 Youts | 2,386 |
| Prairie Oil & Gas Co.: | |
| 1 Wolfe | 855 |
| 3 Wolfe | 1,835 |
| Total (35 wells) | 89,737 |

A shallow sand well south of Gotebo in Kiowa County was the cause of some excitement in that region. Alexander & Taylor's No. 1 Fuqua SW cor. SW NE Section 18-6n-16w, had a lime at 421 feet, and from that depth to 435 feet, the well had a showing of oil estimated at 15 or 20 bbls. The well was reported drilled deeper to a total depth of 438 feet, and the oil increased. Reports of the output vary, but the general opinion is that it is good for 80 bbls. daily on the pump. A well of this size at this depth should be a profitable proposition, and the field will probably be developed immediately. There is an old refinery at the city of Gotebo, some 6 miles from the well.

### Seminole Production

The production of the Greater Seminole Field by companies and leases on Thursday, October 25, follows:

**Little River Pool**

| Company, farm— | Location | Wells | Prod. |
|---|---|---|---|
| Amerada: | | | |
| Nitcy | 2- 7-6 | 3 | 1,05 |
| Amerada-Wilcox: | | | |
| Fore | 35- 8-6 | 2 | 33 |
| Barnsdall: | | | |
| Cotcha | 23- 7-6 | 2 | 1,73 |
| Hotulke | 22- 7-6 | 2 | 58 |
| Walker | 4- 7-6 | 1 | 56 |
| Blackwell: | | | |
| Baker | 11- 7-6 | 4 | 2,15 |
| Nitcy | 35- 8-6 | 6 | 1,45 |
| Talley | 14- 7-6 | 3 | 95 |
| Bryan: | | | |
| Emery | | 1 | 1 |
| Carter: | | | |
| Cotcha, M. | 23- 7-6 | 3 | 38 |
| Fish | 36- 8-6 | 4 | 48 |
| Harjo, C. | 11- 7-6 | 2 | 7,56 |
| Harjo, M. | 13- 7-6 | 2 | 1,15 |
| Jackson | 11- 7-6 | 3 | 1,53 |
| Larney | 24- 7-6 | 2 | 1,36 |
| Lena | 10- 7-6 | 1 | 1,10 |
| Moore | 11- 7-6 | 2 | 88 |
| Tewee | 14- 7-6 | 5 | 4,58 |
| Thomas | 11- 7-6 | 2 | 47 |
| Wilson | 12- 7-6 | 2 | 73 |
| Champlin: | | | |
| Tewee | 14- 7-6 | 2 | 2,33 |
| Continental: | | | |
| Cosar | 36- 8-6 | 7 | 2,07 |
| Cosar, M. | 25- 8-6 | 1 | 47 |
| Continental & Fisher: | | | |
| Milsey | 11- 7-6 | 1 | 1,94 |
| Empire: | | | |
| Charty | 24- 7-6 | 1 | 4 |
| Coker | 13- 7-6 | 1 | 2 |
| Sander | 3- 7-6 | 1 | 1 |
| Gypsy: | | | |
| Brown, C. | 33- 8-6 | 2 | 87 |
| Brown, M. | 33- 8-6 | 1 | 1,34 |
| Campbell | 33- 7-6 | 2 | |
| Conard | 22- 7-6 | 2 | 1,13 |
| Cosar, M. | 25- 8-6 | 1 | |
| Cosar, W. | 36- 8-6 | 2 | 17 |
| Cotcha | 23- 7-6 | 4 | 2,16 |
| Denmark | 11- 7-6 | 4 | 3,30 |
| Hulhoke | 14- 7-6 | 10 | 5,95 |
| Mungee | 1- 7-6 | 1 | |
| Pottie | 35- 8-6 | 4 | 9 |
| Renton | 11- 7-6 | 2 | 66 |
| Independent: | | | |
| Davis, R. | 13- 7-6 | 3 | 1,71 |
| Tewee | 14- 7-6 | 6 | 3,35 |
| Williams | 15- 7-6 | 1 | 1,04 |
| Independent & Highway: | | | |
| Harris | 23- 7-6 | 8 | 3,16 |
| Independent & White Eagle: | | | |
| Davis | 2- 7-6 | 4 | 1,25 |
| I. T. L. O.: | | | |
| Campbell | 1- 7-6 | 1 | 1 |
| Dungan | 35- 8-6 | 3 | 1,20 |
| House, M. A. | 1- 7-6 | 1 | |
| House, W. E. | 1- 7-6 | 1 | |
| House "B" | 2- 7-6 | 4 | 8 |
| Hull | 26- 8-6 | 3 | |
| Jackson | 1- 7-6 | 3 | 4 |

## WILDCAT OPERATIONS IN OKLAHOMA

### NORTHERN OKLAHOMA

**LATTIMER COUNTY**

Limestone Oil & Gas Co.'s No. 1 McMurray, SW cor. SW Sec. 15-5-18 ..... Shut down 1,800 ft.

**GRANT COUNTY**

J. V. Bailey and others' No. 1 Maddox, C SE Sec. 18-27-5w ..... Dry and abandoned 5,058 ft.

Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-26-4w ..... Shut down 5,640 ft.

**HARPER COUNTY**

Hoffer Oil Co.'s No. 1 Cooper, NW cor. SE SE Sec. 12 25-22w ..... Shut down 4,130 ft.

**KAY COUNTY**

Geo. L. Miller and others' No. 1 Home, NW cor. SE Sec. 11-24-3 ..... Dry and abandoned 4,031 ft.

Larlo Oil Co.'s No. 1 McKay, NW NE Sec. 14-29-1 ..... Underreaming 2,142 ft.

Tonkawa Development Co.'s No. 1 McDaniels, SE cor. SE Sec. 15-25-1w ..... Wilcox sand 4,915-4,926; dry and abandoned.

**WOODWARD COUNTY**

Ottstot Development Co.'s No. 1 Simmons, SE cor. SE Sec. 32-24-17w ..... Shut down for pipe 1,490 ft.

Sharon Oil Co.'s No. 1 Elmore, SW cor. SW Sec. 25 21-21w ..... Rig blown down 3,025 ft.

Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w ..... Shut down 500 ft.

Burgoyne Brothers' No. 1 Merklin, SW cor. SE NE Sec. 15-21-19w ..... Underreaming 1,810 ft.

Farrond and others' No. 1 Johnson, SW cor. SW Sec. 1-23-17w ..... Underreaming 1,560 ft.

**GARFIELD COUNTY**

E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w ..... Shut down 4,755 ft.

Marland and Barnsdall's No. 1 Looman, NE SE Sec. 9-20-4w ..... Shut down 5,735 ft.

Marland Oil Co.'s No. 1 Miller, SW cor. SW Sec. 12-20-4w. Shut down at 4,575 ft. waiting on test Sec. 9-20-4w.

**NOBLE COUNTY**

Alco Royalty Co.'s No. 1 Waltermire, SE cor. NW Sec. 33-21-1w ..... Location.

Marland Oil Co.'s No. 1 Kidd, NW cor. SW Sec. 32-20-1w ..... Shut down at 5,290 ft.; plugging back to show oil 1,836 ft.

**KINGFISHER COUNTY**

Galt-Brown Oil Co.'s No. 1 Wolff, NW SE Sec. 6-16-7w. Completed contract 4,515 ft.; shut down.

McKinney & Crawford's No. 1 Sturgeon, NE cor. SW Sec. 27-16-6w ..... Drlg. 4,610 ft.

**LOGAN COUNTY**

Champlin Refining Co.'s No. 1 Clark, SE cor. SW Sec. 8-19-4w ..... Dry and abandoned 6,726 ft

Margay Oil Co.'s No. 1 Cole, SE cor. SW NE Sec. 24-18-5w ..... Rig.

Haley & Smith's No. 1 Guier, SE cor. SW Sec. 23-18-3w. Shut down 3,967 ft.

J. L. Donahoe's No. 2 fee, SW cor. NW SE Sec. 21-18-2w. Drlg. 4,710 ft.

**BLAINE COUNTY**

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w ..... Spudded and shut down; renewing leases.

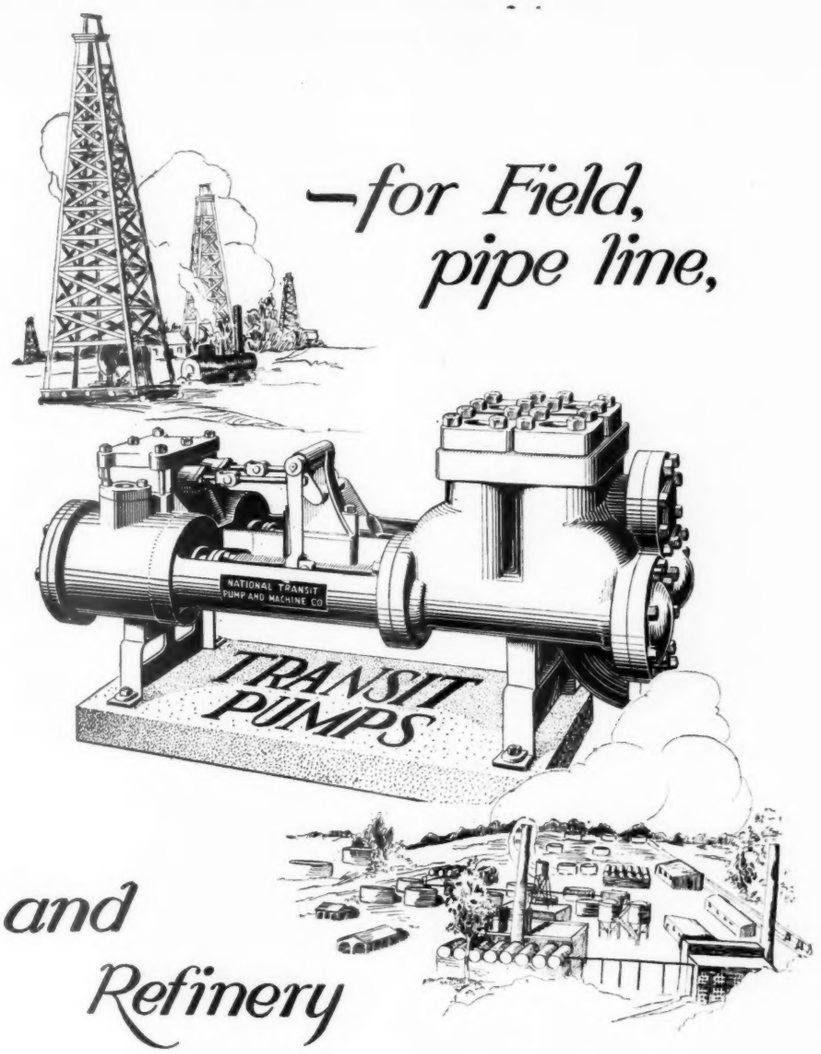
W. J. Donnelly, trustee's No. 1 Dicken's NE cor. SE Sec. 26-15-12w ..... Drlg. 3,910 ft.

Ragland and others' No. 1 Unknown, C NW SW Sec. 13-19-10w ..... Rig.

**LINCOLN COUNTY**

Phillips Pet. Co.'s No. 1 Stephens, SE cor. NW Sec. 29-12-3 ..... Location.

(Continued on Page 90)




*—for Field, pipe line, and Refinery*

IN THIS BUSINESS of producing and transporting and refining oil, men put pumps to tasks the average manufacturer would call unreasonable. But TRANSIT PUMPS are made for these tasks. They are Oil Country Pumps not only by adoption, but adaption. Companies where the responsibility for equipment rests with engineering departments can hardly believe their own data on the way TRANSIT PUMPS accept the most unusual tasks as pure routine, doing with ease and economy the very things that have always caused the most trouble around field, pipe line and refinery.

# TRANSIT PUMPS

**Axelson Machine Co.**
*Sucker Rods, Pull Rods, Plunger Working Barrels (Pumps) etc.*

**Beaumont Iron Works Company**
*Dreadnaught Rotary Equipment Water-Cooled Drawworks, Pumping Hoists, Traveling Blocks, etc.*

**Donovan Boiler Works**
*Oil Country Boilers and Tanks.*

**Frick-Reid Service Belting**
*Rubber Covered and Friction Surface.*

**Whitlock Cordage Co.**
*Manila Cordage, including Frick-Reid Manila Bull Ropes—same quality for ten years.*

**J. P. Ratigan**
*Grips, Clamps, Beam Hangers.*

**Joseph Reid Gas Engine Company**
*Gas and Oil Engines, two and four-cycle, Band Wheel and Direct Drive Pumping Powers.*

**National Transit Pump and Machine Co.**
*Power and Steam Pumps.*

**Jones & Laughlin Steel Corporation**
*Seamless and Lapwelded Tubular Goods*

**Walworth Company**
*Valves, Fittings and Tools for Steam, Water, Gas, Oil and Air.*

**Rossendale-Reddaway Company**
*"Camel Hair" Beltings, Belt Clamps.*

**Engineering Crews**
*for the installation of Pumping Powers and related equipment.*

## Frick-Reid Supply Corporation

Pittsburgh, Pa. Tulsa, Okla.

STORES EVERYWHERE

| | | | |
|---|---|---|---|
| McCulla | 1- 7-6 | 3 | 560 |
| Nitey | 2- 7-6 | 6 | 135 |
| Phoebe "A" | 36- 8-6 | 3 | 245 |
| Phoebe "B" | 36- 8-6 | 4 | 185 |
| Reed | 1- 7-6 | 1 | .... |
| Soketheche | 1- 7-6 | 3 | 603 |
| **Magnolia:** | | | |
| Cruse | 2- 7-6 | 4 | 416 |
| Denby | 11- 7-6 | 3 | 1,408 |
| Dixon | 31- 8-7 | 1 | 6 |
| Harjo, A. | 14- 7-6 | 2 | 400 |
| Harjo, B. | 14- 7-6 | 2 | 1,320 |
| Leva | 10- 7-6 | 1 | .... |
| Pottie | 35- 8-6 | 4 | 600 |
| Reed, E. | 31- 8-7 | 1 | 21 |
| Reed, I. | 22- 7-6 | 3 | 1,208 |
| **McCulloch:** | | | |
| Hausen | | 1 | 70 |
| **Mid-Continent:** | | | |
| Brunner | 11- 7-6 | 4 | 2,185 |
| Eleck | 23- 7-6 | 1 | 440 |
| Smith | 5- 7-7 | 1 | 1,595 |
| Wadsworth | 36- 8-6 | 7 | 435 |
| **W. B. Pine:** | | | |
| Hoyech | 26- 8-6 | 6 | 2,968 |
| **Pine-Phillips:** | | | |
| Pottie | 35- 8-6 | 2 | 360 |
| **Prairie:** | | | |
| Chilcoat | 25- 8-6 | 3 | 875 |
| Dungan | 35- 8-6 | 1 | 40 |
| Gibson | 14- 7-6 | 6 | 3,070 |
| Harris | 14- 7-6 | 3 | 1,555 |
| House | 2- 7-6 | 4 | 340 |
| Moppin | 24- 7-6 | 1 | 425 |
| Talley | 14- 7-6 | 4 | 2,390 |
| **Prairie & Amerada:** | | | |
| Sunny | 14- 7-6 | 8 | 7,350 |
| **Pure:** | | | |
| Cotcha | 14- 7-6 | 9 | 5,166 |
| Harlo | 11- 7-6 | 4 | 1,374 |
| **Reiter-Foster:** | | | |
| Bunyard | 14- 7-6 | 4 | 4,105 |
| **Roxana:** | | | |
| Caesar | 11- 7-6 | 1 | 36 |
| Hotulke | 23- 7-6 | 4 | 1,242 |
| Johnson | 13- 7-6 | 3 | 2,518 |
| **Shaffer:** | | | |
| Narcome | 36- 8-6 | 2 | 200 |
| **Sinclair:** | | | |
| Cosar | 30- 8-6 | 3 | 845 |
| Haney | 12- 7-6 | 1 | 105 |
| Towre | 14- 7-6 | 2 | 2,315 |
| Williams, L. | 15- 7-6 | 1 | .... |
| **Sinclair & Winkwood:** | | | |
| Pompey | | 1 | 445 |
| **Skelly:** | | | |
| Carl | 14- 7-6 | 2 | 2,216 |
| **Slick:** | | | |
| Reed | 13- 7-6 | 1 | 1,380 |
| Williams | 15- 7-6 | 2 | 575 |
| **Snowden-McSweeney:** | | | |
| Tiger | 13- 7-6 | 3 | 1,650 |
| **Superior:** | | | |
| Potulka | 31- 8-6 | 1 | 5 |
| Soketheche | 1- 7-6 | 1 | .... |
| **Texas:** | | | |
| Brooks | | 1 | 160 |
| Coker | 1- 7-6 | 3 | 600 |
| Janey | 11- 7-6 | 3 | 1,510 |
| **Texas & Independent:** | | | |
| Hotulke | 23- 7-6 | 3 | 1,735 |
| **Tidal:** | | | |
| House | 1- 7-6 | 3 | 480 |
| Johnson | 1- 7-6 | 1 | 25 |
| **Twin States:** | | | |
| Lowe | 25- 8-6 | 1 | 130 |
| Total | | 292 | 127,268 |

**Maud Pool**

| | | | |
|---|---|---|---|
| **Barnsdall:** | | | |
| Fife | 14- 8-5 | 1 | 1,100 |
| **Pure:** | | | |
| Lindly | 18- 8-5 | 1 | .... |
| Total | | 2 | 1,100 |

**Mission Pool**

| | | | |
|---|---|---|---|
| **Carter:** | | | |
| Fuswa | | 1 | .... |
| Micco | 8- 8-6 | 1 | .... |
| **Gypsy:** | | | |
| Baby | 6- 8-6 | 1 | .... |
| Barkus | 6- 8-6 | 1 | .... |
| Dosar | 7- 8-6 | 1 | .... |
| Mission | 5- 8-6 | 1 | 20 |
| Mosar | 1- 8-5 | 1 | .... |
| **Maland:** | | | |
| Maines | 7- 8-6 | 1 | .... |
| **Mid-Kansas:** | | | |
| Moore | | 1 | .... |
| **Roxana:** | | | |
| Maines | 7- 8-6 | 1 | .... |
| **Twin States:** | | | |
| Hayes | 8- 8-6 | 1 | 50 |
| Total | | 11 | 70 |

**Bowlegs Pool**

| | | | |
|---|---|---|---|
| **Amerada:** | | | |
| Roscoe | 15- 8-6 | 8 | 1,290 |
| **Atlantic:** | | | |
| Baker | 10- 8-6 | 4 | 465 |
| Fleet | 23- 8-6 | 3 | 300 |
| Grayson | 13- 8-6 | 4 | 614 |
| Jones, A. | 16- 8-6 | 2 | 65 |
| Jones, C. | 9- 8-6 | 1 | 165 |
| **Barnsdall:** | | | |
| McNac | 28- 8-6 | 1 | 22 |
| Murrow | 11- 8-6 | 4 | 502 |
| **Carter Oil:** | | | |
| Bowlegs | 15- 8-6 | 4 | 998 |
| Burden | 23- 8-6 | 2 | 125 |
| Harjoche | 14- 8-6 | 6 | 838 |
| Hilly | 23- 8-6 | 3 | 670 |
| Jones | 11- 8-6 | 4 | 615 |
| Walker | 15- 8-6 | 4 | 480 |
| Wise | 23- 8-6 | 11 | 1,978 |
| **Dixie:** | | | |
| Culey | 11- 8-6 | 1 | 95 |
| **Empire:** | | | |
| Lacy | 14- 8-6 | 6 | 517 |
| Wise | 23- 8-6 | 2 | 252 |
| **Gypsy:** | | | |
| Bowlegs | 22- 8-6 | 1 | 210 |
| Bradley | 9- 8-6 | 1 | 2 |
| Cumsey | 10- 8-6 | 4 | 740 |
| Grayson | 13- 8-6 | 4 | 417 |
| Harjoche | 10- 8-6 | 3 | 992 |
| Jones | 11- 8-6 | 1 | 87 |
| Walker | 15- 8-6 | 7 | 945 |
| Wise | 23- 8-6 | 2 | 200 |
| **I. T. I. O.:** | | | |
| Barnett | 24- 8-6 | 2 | 253 |
| Barnett "B" | 23- 8-6 | 1 | 220 |
| Billington | 22- 8-6 | 5 | 409 |
| Bowlegs | 22- 8-6 | 10 | 1,904 |
| Davis | 13- 8-6 | 4 | 839 |
| Fay | 13- 8-6 | 9 | 1,716 |
| Goforth | 15- 8-6 | 12 | 1,194 |
| Livingston | 15- 8-6 | 10 | 2,292 |
| Lizzie | 13- 8-6 | 3 | 290 |
| Walker | 15- 8-6 | 8 | 829 |
| Williams | 12- 8-6 | 1 | 215 |
| Wilmott | 15- 8-6 | 4 | 242 |
| Work | 24- 8-6 | 1 | 118 |
| Youngblood | 24- 8-6 | 2 | 86 |
| **Magnolia:** | | | |
| Davis | 13- 8-6 | 3 | 469 |
| Davis, M. | 13- 8-6 | 1 | 182 |
| Hammond | 10- 8-6 | 7 | 894 |
| Rhodes | 12- 8-6 | 5 | 1,647 |
| Van Buskirk | 9- 8-6 | 2 | 588 |
| **McCulloch:** | | | |
| Bowlegs | 22- 8-6 | 2 | 220 |
| **Mid-Continent:** | | | |
| Baker | 10- 8-6 | 4 | 692 |
| Bowlegs | 22- 8-6 | 1 | 5 |
| Smith | 12- 8-6 | 6 | 575 |
| **Minnehoma:** | | | |
| Bowlegs | 15- 8-6 | 4 | 330 |
| **Prairie:** | | | |
| Gahagan | 23- 8-6 | 4 | 335 |
| Harber | 10- 8-6 | 8 | 2,805 |
| Jones | 11- 8-6 | 4 | 305 |
| Templeton | 12- 8-6 | 5 | 2,055 |
| Whitney | 23- 8-6 | 4 | 530 |
| **Pure Oil:** | | | |
| Reed | 14- 8-6 | 14 | 3,521 |
| Strother "D" 11 & | 14- 8-6 | 4 | 230 |
| Strother "F" | 10- 8-6 | 7 | 2,766 |
| **Roxana:** | | | |
| Taylor | 16- 8-6 | 5 | 56 |
| **Shaffer:** | | | |
| Lacy | 14- 8-6 | 3 | 345 |
| **Sinclair:** | | | |
| Cumsey | 10- 8-6 | 4 | 1,015 |
| Ellen | 11- 8-6 | 6 | 1,021 |
| Harjo | 14- 8-6 | 3 | 857 |
| Jones | 9- 8-6 | 7 | 710 |
| Taylor | 10- 8-6 | 4 | 1,370 |
| Taylor, W. | 10- 8-6 | 3 | 570 |
| Walker | 22- 8-6 | 4 | 712 |
| **Slick:** | | | |
| Jones | 3- 8-6 | 1 | 370 |
| **Texas:** | | | |
| Reed | 14- 8-6 | 11 | 965 |
| **Tidal:** | | | |
| Grayson | 13- 8-6 | 4 | 335 |
| Harjoche | 10- 8-6 | 6 | 1,240 |
| Jones | 11- 8-6 | 1 | .... |
| Total | | 311 | 51,856 |

**Earlsboro Pool**

| | | | |
|---|---|---|---|
| **Amerada:** | | | |
| Anderson | 15- 9-5 | 2 | 535 |
| Cowden | 4- 9-5 | 7 | 1,170 |
| Rogers | 3- 9-5 | 2 | 178 |
| **Atlantic & Sinclair:** | | | |
| Foreman | 18- 9-5 | 1 | 140 |
| **Barnsdall:** | | | |
| Brown | 10- 9-5 | 4 | 2,135 |
| Bruno, F. | 2- 9-5 | 3 | 289 |
| Bruner, N. | 10- 9-5 | 3 | 431 |
| Cudjo | 14- 9-5 | 1 | 23 |
| Davis, D. | 11- 9-5 | 3 | 239 |
| Davis, J. | 11- 9-5 | 4 | 1,039 |
| Davis, M. | 11- 9-5 | 2 | 63 |
| Gibson | 9- 9-5 | 8 | 1,976 |
| Hern | 15- 9-5 | 1 | 2 |
| Ingram | 1- 9-5 | 8 | 933 |
| Pack, S. | 10- 9-5 | 4 | 166 |
| Peter | 10- 9-5 | 4 | 93 |
| Sango | 1- 9-5 | 4 | 2,246 |
| Sebalka | 15- 9-5 | 1 | 289 |
| Sullivan, H. | 11- 9-5 | 1 | 19 |
| Sull-Harjo | 10- 9-5 | 2 | 33 |
| Wasutke | 12- 9-5 | 4 | 525 |
| **Burke-Greis:** | | | |
| Wisner | 6- 9-6 | 1 | 1,010 |
| **Carter:** | | | |
| Davis | 13- 9-5 | 2 | 170 |
| James | 6- 9-6 | 4 | 4,588 |
| Sango | 1- 9-5 | 1 | 15 |
| **Continental:** | | | |
| Kays | 2- 9-5 | 2 | 60 |
| Spencer | 12- 9-5 | 4 | 1,130 |
| **Empire:** | | | |
| Barker | 12- 9-5 | 1 | 85 |
| Edmondson | 3- 9-5 | 3 | 110 |
| **Gypsy:** | | | |
| Bruner | 10- 9-5 | 4 | 3,567 |
| Carter, B. | 11- 9-5 | 8 | 3,750 |
| Earl | 16- 9-5 | 1 | 19 |
| Hunick | 6- 9-5 | 1 | 1,957 |
| Noble | 12- 9-5 | 4 | 1,725 |
| Peter | 10- 9-5 | 3 | 275 |
| Sango | 1- 9-5 | 11 | 5,030 |
| State | 16- 9-5 | 4 | 850 |
| **Independent:** | | | |
| Bruner | 10- 9-5 | 3 | 465 |
| Sullivan | 10- 9-5 | 1 | 22 |
| Knapp | 8- 9-5 | 3 | 1,205 |
| **Independent-Margay:** | | | |
| Gains | 11- 9-5 | 3 | 450 |
| **Magnolia:** | | | |
| Bryant | 9- 9-5 | 6 | 402 |
| Cowden | 4- 9-5 | 4 | 35 |
| Dixon | 12- 9-5 | 1 | 23 |
| Edmondson | 3- 9-5 | 2 | 15 |
| Holmsley | 11- 9-5 | 7 | 700 |
| Hyde | 13- 9-5 | 1 | 1,502 |
| Ingram | 10- 9-5 | 1 | 16 |
| Lena | 10- 9-5 | 3 | 49 |
| Seay | 12- 9-5 | 9 | 2,547 |
| Simpson | 10- 9-5 | 4 | 479 |
| Sparks | 11- 9-5 | 7 | 823 |
| Sullivan | 12- 9-5 | 3 | 105 |
| **McCulloch:** | | | |
| Rentie | 7- 9-6 | 1 | .... |
| **Mid-Continent:** | | | |
| McCumber | 9- 9-5 | 7 | 67 |
| **Mid-Kansas:** | | | |
| Anderson | 14- 9-5 | 3 | 65 |
| **Phillips:** | | | |
| Dunaway | 14- 9-5 | 1 | 25 |
| **Prairie:** | | | |
| Baker | 24- 9-5 | 1 | 50 |
| Davis | 13- 9-5 | 3 | 2,785 |
| Graham, C. | 3- 9-5 | 2 | 25 |
| Graham, O. | 10- 9-5 | 4 | 1,105 |
| Stidham | 11- 9-5 | 11 | 2,090 |
| **Roxana:** | | | |
| Bayless | 17- 9-5 | 1 | 15 |
| Hearn | 13- 9-5 | 1 | 128 |
| Spencer | 12- 9-5 | 2 | 1,306 |
| **Shaffer:** | | | |
| Clark | 1- 9-5 | 3 | 222 |
| McCoy | 36-10-5 | 1 | 1,135 |
| **Sinclair:** | | | |
| Foreman | 18- 9-5 | 1 | 15 |
| Hollins | 12- 9-5 | 1 | 35 |
| Sango | 2- 9-5 | 4 | 3,045 |
| **Skelly:** | | | |
| Mays | 1- 9-5 | 1 | 2,745 |
| Shepard | 6- 9-6 | 1 | 1,409 |
| Spencer | 12- 9-5 | 1 | 501 |
| **Skelly & Atlantic:** | | | |
| Sherry | 6- 9-6 | 2 | 1,678 |
| **Slick:** | | | |
| James | 6- 9-6 | 1 | .... |
| **Slick et al:** | | | |
| Campbell | 6- 9-6 | 2 | 786 |
| **Superior:** | | | |
| Ingram | 1- 9-5 | 1 | 1,000 |

(Continued on Page 114)

# SHOWING OF OIL IN ROOKS COUNTY AND ANOTHER WELL IN M'PHERSON

By J. L. Dwyer
*Staff Correspondent, Kansas Fields*

A showing of oil in a well in Rooks County, and another well finding oil in McPherson County, were the most interesting bits of production news from Kansas last week. The Keys Petroleum Co.'s No. 1 Rathburn, NE cor. SW Section 14-9-16w had the Oswalt lime at 3,236 feet with a break from 3,254-59 feet, and the hole filled up 500 feet with oil. The well is now shut down for orders.

In the McPherson district, the Mid-Co. Oil Co. and others' No. 1 Hawkinson, NW cor. SE Section 32-18-2w, had the chat at 2,965-74 feet with 2,500,000 feet of gas, and a flow of oil which is estimated from 200 to 250 bbls. The oil tested 30 degrees A.P.I. at a temperature of 74 degrees which means that at normal temperature it would have a gravity of 28 degrees plus. The new well is also making about 12 per cent water, and seems to be acting somewhat like the Mid-Kansas Oil & Gas Co.'s No. 1 Larson in Section 31-18-2w, which tapped the chat some months ago.

The leasing activity was slightly quiet in western Kansas last week, except in Reno County which seems to be coming to the front. To the east, the Sedgwick-Harvey McPherson counties are still the most interesting regions, and they continue to receive a good play in lease purchases.

The discovery well in the Sedgwick area, Gypsy Oil Co., Marland Production Co. and Bu-Vi-Bar Petroleum Co.'s No. 1 Wright, in Section 12-26-1w is holding up to 1,600 bbls. daily.

The daily average production of the Churchill Pool of Sumner County for the week ending Saturday, October 27, was 8,208 bbls. from 74 wells. The Oxford Pool of the same township produced 7,832 bbls. daily from 100 wells during the same period.

### Butler County

O. V. Paul and others' rig is up for No. 1 Unger, CSL SE SW, Section 31-26-6. Amerada Petroleum Corp. made location for No. 1 Bolin, SW cor. SE NW, Section 36-26-6. Empire Oil & Refining Co. is building the rig for No. 5 Willets, SE cor. SW, Section 27-27-5. Garden and others' No. 2 Sluss "C," SW cor. NW NE, Section 6-27-6, was completed for 128 bbls. in sand at 2,724-50 feet.

### Cowley County

Torrance and others' No. 1 Townsite, Lot 4-R-5, Block 324, NW cor. SW SE SE, Section 12-33-6, is spudding. White Eagle Oil & Refining Co.'s No. 1 Smith, SE cor. NE SE, Section 26-34-5, is dry and abandoned at 3,645 feet.

### Elk County

McCulloch Oil Co.'s No. 1 Dunlap, C NW NE, Section 13-29-9, is rigging up. Griffen & Bell's No. 5 Collier, SW cor. NE NW, Section 30-30-10, is spudding. Wilson & Jones and others' No. 2 Walker, SE cor. NW SE, Section 5-31-10, is a machine rigging up.

Jacon Oil Co.'s No. 2 Mullendore, SW cor. NW SW, Section 3-30-9, has been abandoned at 750 feet. Superior Oil Co. and Devore's No. 1 McIntire, SE cor. NE NW, Section 4-30-9, is dry and abandoned at 2,419 feet. Denton and others' No. 1 McSpadden, NE cor. NW NW, Section 10-31-10, is dry and abandoned in Wilcox sand at 2,315-21 feet.

### Greenwood County

Amerada Petroleum Corp. has the rig up for No. 4 Luthi, NW cor. NE SW, Section 29-22-13. Simmons & Rhodes made location for No. 2 Luthi, NW cor. SW SW, Section 29-22-13. Amerada Pe-

(Continued on Page 98)

## KANSAS WILDCATS

**BARBER COUNTY**

Barbara Oil Co.'s No. 1 Blunk, C NE NW Sec. 20-34-13w.. Shut down 4,521 ft.
Roland et al's No. 1 Pickens, NE cor. NW NE Sec. 27-30-14w ..... Drlg. 3,942 ft.
Skelly Oil Co. et al's No. 1 Winter, C E half Sec. 11-31-12w ..... Dry and abandoned 4,530 ft.

**BARTON COUNTY**

Everett & Wiley's No. 1 Ward, NW cor. SW, Sec. 12-20-13w ..... Shut down 3,948 ft.
McJilton et al's No. 1 Evanston, SE cor. NW Sec. 34-17-11w ..... Rig.
Mid-West Exploration Co.'s No. 1 Karst, SW cor. SW Sec. 11-16-15w ..... Drlg. 1,035 ft.

**BUTLER COUNTY**

O. H. Fleming et al's No. 1 Brainard, NE cor. NW Sec. 22-24-3 ..... Drlg. 3,122 ft.
LaRobb et al's No. 1 Bronsenger, NE cor. SW, Sec. 24-27-3 ..... Rig.
Swartz et al's No. 2 Randall NW cor. NE NW Sec. 22-24-4 ..... Drlg. 638 ft.

**CHASE COUNTY**

Griener & Fowler's No. 1 Carson, NE cor. NE Sec. 9-21-7 ..... Drlg. 3,162 ft.

**COWLEY COUNTY**

Jones & Hall's No. 1 Shapland, NE cor. NW SE Sec. 20-30-6 ..... Drlg. 3,014 ft.
Roth & Faurot's No. 1 Ridding, SE cor. NW Sec. 31-32-6 ..... Spudded and shut down.
Roxana Pet. Corp.'s No. 1 Galley, NE cor. NW SW Sec. 18-35-3 ..... Drlg. 2,150 ft.
Pyle & Sutter's No. 1 Lindstrom, SW cor. NE Sec. 9-35-4 ..... Drlg. 834 ft.
Prairie Oil & Gas Co.'s No. 1 Shane, SE cor. NW Sec. 13-33-3 ..... Shut down 3,340 ft.
Empire-Marland-Twin States, No. 1 Feaster, NW cor. NE Sec. 36-32-5 ..... Rig.
E. B. Shawver's No. 1 Cook, NE cor. NE Sec. 20-30-6.... Drlg. 2,820 ft.
Roth & Faurot's No. 1 Ehmke, NE cor. NW Sec. 14-32-3.. Dry and abandoned 3,466 ft
Crow & White's No. 1 Powers, C NW NE Sec. 9-32-5..... Sand 714-734 ft., 1,000,000 ft. gas
Slick & Martin's No. 1 Aspaugh, SW cor. NE Sec. 27-31-5 ..... Drlg. 1,925 ft.
J. B. Markey's No. 1 Tatum, SE cor. SW Sec 11-31-6.... Shut down 500 ft.
Jones & Hall's No. 1 Shapland, SE cor. NW SE Sec. 20-30-6 ..... Shut down 3,396 ft.

**DICKINSON COUNTY**

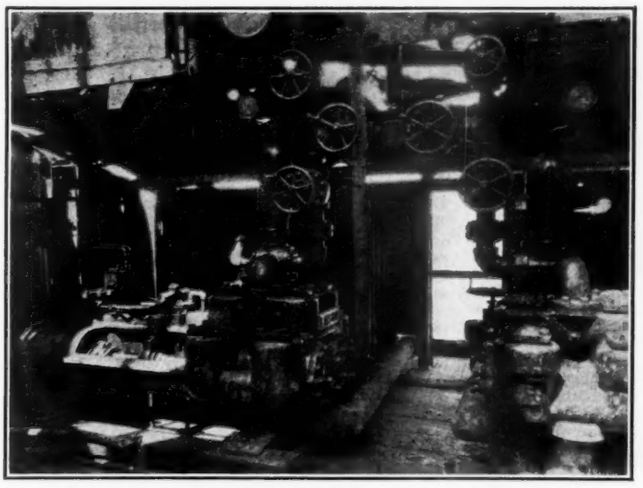
Empire G. & F. Co.'s No. 1 Duffy, NE cor. SW SE, Sec. 3-12-3 ..... Dry and abandoned 2,983 ft.

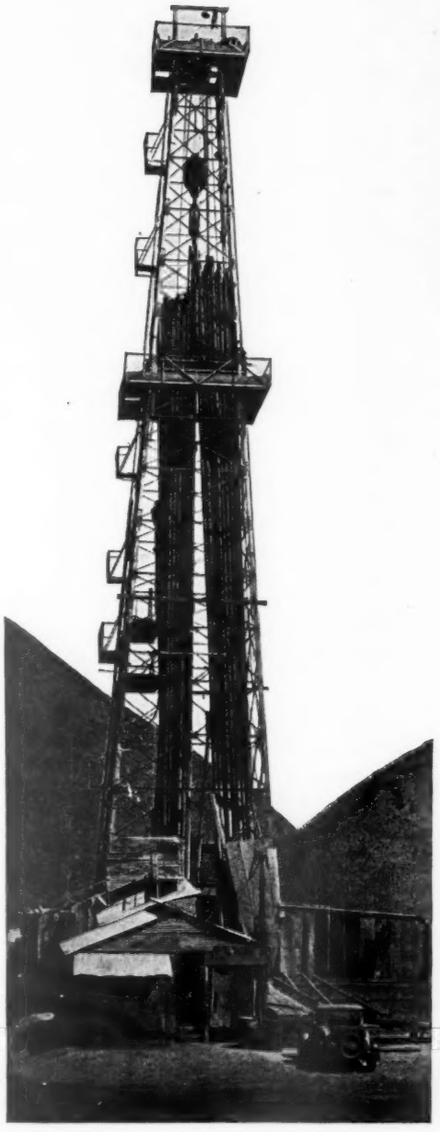
**ELLIS COUNTY**

Derby Oil Co.'s No. 1 Weigel, C NW Sec. 25-12-17w ..... Dry and abandoned 4,068 ft
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ..... Shut down 1,100 ft.
Transcontinental Oil Co.'s No. 1 Boetcher, NW cor. SE SW Sec. 21-13-19w ..... Underreaming 2,865 ft.
Finney & Wejner's No. 1 Freeman, SE cor. SW Sec. 24-15-20w ..... Rig.
Labette Oil Co.'s No. 1 Urban NE cor. NW NW Sec. 19-15-16w ..... Shut down 1,800 ft.
James A. Brouk et al's No. 1 Gorham estate, C SE SE Sec. 25-15-16w ..... Spudded and shut down.
Derby Oil Co.-Empire Oil & Ref. Co.'s No. 1 Krause NW cor. SW SW Sec. 17-14-19w ..... Drlg. 3,015 ft.
Phillips Pet. Co.'s No. 1 Brull, C NW Sec. 34-14-17w..... Spudded.
Moncrief et al's No. 1 Johnson, SW cor. NE Sec. 9-13-19w ..... Rig.
John Brown's No. 1 Gestner, SE cor. SW NE Sec. 13-13-18w ..... Spudded and shut down.
Empire Oil & Ref. Co.'s No. 1 Wann, NE cor. NE, Sec. 31-12-19w ..... Shut down 1,493 ft.

(Continued on Page 93)

# 7,957 feet to Oil Sand





**Associated Oil Company used Gardner 14x7¼x14 Super Booster Pumps to drill the 7,957 foot well, Lloyd No. 100 at Ventura, California.**

**The correct design, choice materials and skilled workmanship of Gardner Boosters made it possible to produce large volumes of mud at the extreme high pressure necessary at such great depth.**

**GARDNER-DENVER COMPANY**
QUINCY, ILL.

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56 Kingsway.

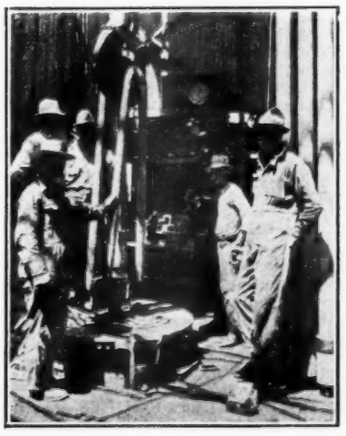
Los Angeles, California,
939 Santa Fe Avenue.

New York City,
30 Church Street.

Philadelphia, Pennsylvania,
2033 Market Street.

San Francisco, California,
163 First Street.

Tulsa, Oklahoma,
502 Tulsa Trust Bldg.



# GARDNER-DENVER

# Bruner Field Center of Attraction

## Golden West Well Flows 600 Bbls. With Tools in Hole and Drilling. Lutex Test Has 36 Feet of Pay in Edwards

By B. D. Stevenson
*Staff Correspondent, Southwest Texas Fields*

SAN ANTONIO, Tex., Oct. 29.—Things moved rather fast in the Joe Bruner Field, adjoining the townsite of Luling in Caldwell County on the north, last week. Golden West Oil Co.'s No. 2 Wilson, the offset to the Sun Oil Co.'s No. 1 Malone, discovery well in the Edwards, had replaced the rig burned down the week before and got started drilling the middle of the week and the well was flowing about 600 bbls. of oil a day with the tools in the hole and drilling. Lutex Oil, Inc., No. 2 Wilson, the first after the discovery well to get into the Edwards lime and reported to have been sold to the Atlantic, cored down to 2,719 feet, where it went into sulphur water, giving it 36 feet of pay in the Edwards. It was plugging back to shut off the last 2 feet and shut the water out. This well swabbed 1,500 bbls. of oil a day, but has not shown a disposition to flow, while the Sun Oil Co. discovery well has been flowing over 600 bbls. of oil a day. It was hoped by deepening to get the Lutex well to flow and also to find out where the sulphur water was. This company is starting two more wells, one an offset to Sun Oil Co.'s No. 2 Malone and also an offset to Golden West Co.'s No. 2 Wilson, and another in the south part of the area, 300 feet west of Davis' No. 1, which was the first producer drilled in the field, producing from the Austin chalk at shallower depth than the Edwards lime.

### South End of Field

Two important things happened at the south end of the field. Wheelock & Collins' No. 1 Orphans Home, in the west edge of Luling, got the chalk at 2,650 feet, which is about 300 feet too low, and Carl Brothers and Suttle's No. 1 Cora Malone and Ratcliff and others' No. 1 Cora Malone, both over 2,000 feet east, are running high. Wheelock & Collins are evidently on the west and downthrow side of the fault, which now must be given more of a north and south trend where heretofore it was supposed to run northeast and southwest. Larson-Walsh's No. 1 Watson and Pat Armstrong's No. 1 August Martin, each on the west or downthrow side of the fault, got the chalk seemingly low, but each is showing oil, and Larson-Walsh is rigging up standard equipment to pump its well.

Armstrong is not through drilling, but hopes to make a well. The field is beginning to shape up a little and some new tests starting will help to shape up faster. T. C. Hadley is deepening his No. 1 Tiller to the north end of the field, and it will help to locate the production. Towns is drilling 1,000 feet west of Hadley. Abercombie of Houston is drilling 1,000 feet southwest of Towns and about the same distance from the line drawn in the early days of the field for the fault line.

T. C. Hadley paid $21,000 cash for 7 acres in the south end of the field, the acreage being a narrow strip across the Merriweather lease between the Magnolia lease on the southwest and the Texas on the northeast, and the southeast end of the strip gives a chance for an offset well to Ratcliff's No. 1 Cora Malone. Ratcliff, at about 1,200 feet, got a lot of gas testing 300 pounds rock pressure. He passed it up and is drilling to the Edwards, but the gas is counted as indicating a structure and the log bears out that it is running high, though it has not yet topped the Austin chalk.

### Acreage Deals

Some big prices have been refused. A $1,000,000 deal was understood to be on covering around 500 acres that is well placed and in the accepted line of production but some distance from actual Edwards lime production. Down around the producers an offer of $7,500 an acre for 25 acres of the Golden West Oil Co. with three wells on it and an offer of $5,000 an acre for the other 25 acres of the fifty with no wells on it has not been accepted at last reports. Golden West's No. 1 Wilson is producing from the Austin chalk at total depth of about 2,555 feet. Its No. 2 Wilson offsets the discovery Edwards lime well and is now drilling and nearing completion and flowing oil from the Edwards. No. 3 Wilson was rigged up with standard equipment to pump from the Austin and was a rather small well when Edwards lime production was found, and it started to deepen with the standard tools, but in the Buda at 2,645 feet it was troubled with caving formation and so started to pump again and made 189 bbls. in eight hours, much more than it did before deepening. It will not be deepened to the Edwards till a rotary rig is available.

The field is still problematic and interesting. That the Lutex Oil, Inc., No. 2 Wilson, second well to reach the Edwards, and located about 1,000 feet southwest from the discovery Edwards lime well, should fail to flow was a disappointment even though it promises to make a good well. The Lutex No. 4 Davis, 300 feet west of No. 1 Davis, will be carried to the Edwards lime and promises to be the first well in the south end of the field to go to the Edwards. It is about 3,000 feet south of the Edwards lime discovery well. Carl Brothers and J. S. Suttle's No. 1 Cora Malone, another 1,000 feet south of that, have stopped in the Austin chalk and are bailing with everything showing for a good well for that formation. They got the chalk high and are debating whether to drill to the Edwards. If they do deepen they have only about 300 feet to drill before being into it, otherwise Ratcliff's No. 1 Cora Malone will be the first well to report on the Edwards lime at the south end of the field, and Towns' No. 1 Davis and Luling Oil & Gas Co.'s No. 3 Carter will be the first to report at the north end.

### Laredo District

Another 150-bbl. well in the Jennings district in a new pool discovered recently by O. W. Killam in Zapata County, and up to the present wanting a satisfactory name, has boosted that area to 4 wells all making oil and with No. 5 drilling and No. 6 a location. Another oil well was also added to the Schoolfield-O'Byrne pool in northwestern Duval County, the second in the field and Usher Carson is wrestling with his No. D-5 Webster in the Carolina-Texas Field in Webb County with the hole 550 feet (about one-fifth) full of oil on the edge of a gas area and a chance that he will make an oil well out of it. These are the stellar happenings in the field for the past week. In the Albercas pool Rycade Oil Corp. got a 40,000,000-foot gas well in its No. 3 Yeager-Strohman at 2,170 feet. It is a west offset to an oil well and is a little disconcerting. Magnolia in that field has gone 1,400 feet east of the south end of the field and made location for its No. 19 Yeager-Strohman.

In the Magnolia-Cole pool two producers, one for 100 bbls. and one for 150 bbls., were inside locations and added nothing but production to the field but the Houston Oil Co. has made location for its No. 17 Benavides in the SW cor. of Block 5, Survey 753, which is one location north of production.

O. W. Killam has completed his No. 4 Cuellar in Zapata County, east of the Jennings gas field, for 150 bbls. at 1,476 feet making 4 good wells in that new field and in the Schoolfield-O'Byrne pool in northwestern Duval Sun Oil Co. is completing its No. 1 Henne-Winch, an east offset to the discovery well. Schoolfield-O'Byrne and W. L. Pearson are completing No. 1 Krauter, a sure oil well and a south offset, and Magnolia testing its No. B-1 Hahl in sand at 2,345-48 feet got both oil and gas. It is 1,400 feet north of the discovery well. Sun Oil Co. got the sand at 2,338-45 feet in its No. 1 Henne-Winch and No. 1 Krauter got the sand at 2,344 feet. Both of these will make oil wells but the Magnolia well getting the sand at practically the same depth is showing gas as well as oil.

### Refugio Field

Interest for the next few days in the Refugio Field will center around the Houston Oil Co.'s No. 4 Wilson Heard, which is a north offset to the Texas Gas Co.'s No. 1 Claude Heard, discovery well at the south end of the field, at 3,702 feet. The Houston Oil Co. well is fixing to test a sand at 4,992 feet, the deepest drilled in the field. The sand is said to look like oil and it has the field a little excited. The Saxet Gas Co.'s No. 4 Claude Heard, east offset to the discovery oil well, has been opened and allowed to blow. The gas pressure seems to have gone down some but it is still a gas well spraying oil. The two wells, one 300 feet west of the discovery well and one 300 feet south, started by Benedum & Trees, who bought the discovery well and 100-acre lease, are the next important tests as wells have been drilled in the other two directions.

Geoge E. Smith drilling No. 1 Rose Rogers off on the west edge of the field is reported making another test of the 3,700-foot sand he found. He had 45 feet of the sand and it is said to have possibilities for oil. The verdict is not yet rendered.

### Agua Dulce Field

Agua Dulce in western Nueces County, another of the new pools of Southwest Texas, will have some definite reports to make in about two weeks or possibly less. Four wells are drilling and one about to start. Houston Oil Co.-Sun Oil Co.'s No. 1 Talbert, an east offset to the discovery well, is down about 1,500 feet and the total depth of the discovery well is 2,020 feet. No. 1 Talbert may be in by the last of this week. Its log seems to be running about 3 feet lower than the discovery well. Agua Dulce has set casing at 350 feet in its No. 1 Sponberg, a half mile northeast of the discovery well, and R. & G. Corp. has set surface casing at 350 feet in its No. 1 Ed Allen a mile south and a little east of the discovery well. No. 1 Sponberg is running about 32 feet lower than the discovery well and No. 1 Allen about 28 feet lower, based on the shallow water sand that the surface casing was set to shut out. Operators could not have made it any better than it is. The discovery well is wet gas and with the new wells running just a little low they are expecting them to make oil. The structure that led to the discovery well being drilled was worked out on this shallow water sand. Davis, Horn and others' No. 1 Ragland 3 miles north and a little east has spudded in

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## EVERY SOUTHWEST TEXAS OPERATOR BUSY FOR FIRST TIME IN MONTHS

By B. D. Stevenson

SAN ANTONIO, Tex., Oct. 29.—With a half dozen new pools being developed in Southwest Texas operators have all centered in these new areas where the trading is brisk. With leases running up to $3,000 an acre for acreage 4,000 feet from a producing well but in good looking territory the wildcatter for the moment is leaving his search in virgin fields and centering in the warmer areas. For for the first time in many months every operator and oil man in Southwest Texas is busy. New spots are Refugio, Agua Dulce, Joe Bruner, Albercas, Magnolia-Cole, Jennings, Schoolfield-O'Byrne, Lytton Springs Townsite, are all recent discoveries and Southwest Texas probably never had so many new fields developing all at one time as at present. The natural result is that operators have deserted schemes for new wildcat projects and have centered in around where oil is being found.

However, Joe Bruner, who discovered the field named for him at the town of Luling, has blocked 7,000 acres around the town of Waelder in Gonzales County, about 18 miles east of the Joe Bruner Field and will drill a well three-quarters of a mile north of the townsite. His 112-foot derrick is up and most of the rig on the ground. Bruner was exploring this territory and had drilled one well that made him think more of the territory in spite of its being a dry hole. He dropped it for the time while trying to perfect his lease block and in the interim went over to Luling and brought in what is likely to be a good field. That over with, all but the development of the acreage which anyone can do, he has turned his attention to the Waelder proposition.

### Duval County

National Oil Co.'s No. 2 Ball, 300 feet to north and west lines of Block 5 of subdivision of Ball ranch, has derrick up.

### Starr County

The Texas Company's No. 1 H. A. Russell, Porcion 69, Block 173-A, 150 feet to south and east lines, is drilling at 200 feet.

### Laredo District

In Starr County, The Texas Company has started its No. 1 Ofelia Resendez, in Block 174, Porcion 69, the only wildcat in the county at this time. O. W. Killam has started No. 1-M Bruni, a mile east of the Aviator Pool and is down 900 feet in his No. 5 Billings in Survey 712, in Webb County.

Scattered wildcat tests, here and there over Southwest Texas, are drilling but none with any particular interest at this time and none threatening new pools. One test should be started by next week in Karnes County. Swacker of New York is starting No. 1 Butler on the Butler ranch near Runge on the acreage blocked by Earl B. Reynolds and on which he has drilled two wells that got evidences of oil.

The deep test by the United North & South Development Co. in western Medina south of D'Hanis, expected to go to the Pennsylvanian if it is there, is about to rig up and get started. In Maverick County, Rycade Oil Corp.'s No. 2 Chittim is down 7,400 feet, one of the

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# Many Completions But Only Little Oil

## Eight of 19 Wells Finished in North Louisiana-Arkansas Were Gassers With Initial Flow of 170,000,000 Feet

By D. H. Bancroft
*Staff Correspondent, Louisiana-Arkansas*

SHREVEPORT, La., Oct. 27.—While there was a fairly good crop of completions in this division this week, only 125 bbls. new production was added. Emphasizing the growing importance of the division as a source of fuel for consumers in five States, 8 of the 19 completions were gassers with a total initial flow of 170,700,000 feet per day of which approximately 42,000,000 feet will be available. Four of the 19 completions were in proven territory and four more were locations abandoned without drilling. Two of the latter were in Champagnolle. Pure Oil Co. elected not to drill Nos. 8 E. F. Gregory in the NE cor. SW SW, Section 11-17-14 and 5 J. M. Gregory in the SW cor. NE SW, of the same section, both being in the extreme eastern edge of production from the 3,200-foot sand.

Root Refineries, Inc., also abandoned No. 2 E. F. Gregory in Section 10-17-14, after cementing back from 3,275 feet, perforating casing and testing water again at 2,738 feet. Magnolia Petroleum Co. abandoned location for No. 1 Robaads in the SE cor. Section 31-23-11 of the Cartersville district in Bossier Parish and Virgil Helm's No. 1 Elkings in Section 32-23-9, Shongaloo district of Webster was dropped off the report as being a duplicate of Jones Brothers' No. 1 Elkins.

### Good Richland Completion

Magnolia Petroleum Co.'s first completion in the Richland Parish gas field was one of the best in that district of great potentialities. Its No. 1 Jartor in the SE cor. SE SW, Section 16-16-6, was completed at 2,445 feet with an estimated 58,000,000 feet of gas, 800 pounds rock pressure. This difference from the average pressure in Richland, 1,200 pounds, no doubt shows the effect upon that part of the field of the tremendous drain through the crater well of the Natural Gas & Fuel Corp. on the Thompson land a half mile southeast, which has been blowing for five or six months and has defied all efforts to kill it.

Magnolia's well was the sole completion in Richland which, though quiet at present and for the last several months, will probably be the most active field in the Shreveport division when all the pipe lines built and building are placed in service. Elm Grove deep stuff furnished a well estimated at 12,500,000 feet open flow in Arkansas Natural Gas Corp.'s No. 7-A Van Hoose in Section 31-16-11, completed at 2,445 feet. The company immediately made location and has derrick up for No. 8-A on the same lease. R. O. Roy abandoned his No. 1 Caplis in Section 25-16-12 as a junked hole at 800 feet and Palmer Corp. completed No. 11 Caplis; Section 26-16-12, as a 3,000,000-foot gasser in the shallow sand at 1,888 feet.

Bailey & Bevil's No. 3 Swope in Section 17-9-1e of the Little Creek Pool in Grant Parish, tested salt water and was abandoned at 1,588 feet. In the Monroe district Southern Carbon Co.'s No. 6 Tensas, Section 10-20-4, Morehouse Parish, was a 25,000,000-foot gasser at 2,152 feet and Magnolia Petroleum Co.'s first well in that area, No. 2 Millsaps, Section 36-20-4, Ouachita Parish, was estimated at 20,000,000 feet, total depth 2,180 feet. Magnolia got into the Monroe and Richland Fields to develop its own production immediately after construction of the Magnolia Gas Co.'s big line from Beaumont got well under way. It has a contract with the Ouachita Natural Gas Co. for a large part of its requirements but also is going after production of its own and has a half dozen or so wells under way.

### Big Clarksville Gasser

A little over 7,000,000 feet of the 170,000,000 feet new gas production this week came from Arkansas Natural Gas Corp.'s No. 1 Bynum in Section 13-10-24, Johnson County, Arkansas, in the Clarksville Field. Completed in the fourth gas sand at 3,126 feet, it gauged 7,194,000 feet with a rock pressure of 1,250 pounds and is one of the best wells in the field.

The west side of Champagnolle produced another big gasser from the shallow sand in Oilwell Corp.'s No. 1-A Kelly in the NE cor. NW SE, Section 9-17-14, which gauged 40,000,000 feet from 18 feet of broken sand, total depth 2,790 feet. It is about a quarter of a mile east of Reliance Drilling Co.'s gasser of equal proportions on the same farm completed several weeks ago in the same horizon. The Panola County section of the East Texas gas fields contributed 5,000,000 feet to the cause when Bethany Oil & Gas Co. (Arkansas Natural Gas Corp.) completed No. 1 Abney in the B. C. Jordan Survey at 1,054 feet.

Ninety barrels of the 125 bbls. new production in the district came from two Humble Oil & Refining Co. wells that have been waiting on standard rig for some time. No. 5-A Groves in Section 1-14-21 started pumping 45 bbls. from 1,117 feet with the bottom in 7 feet of sand, and No. 6-A did a like amount from 6 feet of sand, total depth 1,108 feet.

O. W. Estes abandoned No. 5 Rowland, Section 14-17-14, the extreme southeastern corner well of Champagnolle deep-sand stuff, as a dry hole at 3,302 feet. Magnolia Petroleum Co.'s No. 5 Caroll in Section 1-17-14, which had stood for a month with 1,500 feet of fluid in the hole from 23 feet of broken sand, started pumping 35 bbls. oil from a total depth of 3,018 feet in the shallow stuff.

### Eastern Champagnolle

With four new jobs getting under way during the week the eastern extension of the shallow sand area remains the active part of Champagnolle, possibilities of which were further emphasized by Lion Oil Refining Co.'s completion of No. 4 Nash in the SW cor. NE SW, Section 6-17-13, flowing 600 bbls. of clean 32 gravity crude from 12 feet of sand, total depth 3,032 feet. The new locations are Magna Producing Co.'s No. 1 El Dorado Realty Co. in the SW cor. NE SE, Section 7-17-13, which has rig up; C. E. Murdock's No. 3 Union Saw Mill in the SW cor. N half NW SW, Section 6-17-13; Ohio Oil Co.'s No. 1 Frazier in the NE cor. SW SW, Section 6-17-13, and the same company's No. 3 Nash, Account 2, in the NE cor. SE SW of the same section.

Magnolia Petroleum Co.'s No. 2 Dumas in the SE cor. SW NE, Section 11-17-14, the farthest east of all the wells in the deep-sand area, tested the shallow pay at 2,736-50 feet and got salt water and is coring. In the discovery, shallow sand, area in Section 1-17-14, Ohio Oil Co.'s No. 4 Crain bailed dry at 3,043 feet and set a long string of liner with one joint of perforated at the bottom and is bailing to test.

Smitherman & McDonald made an important test on their No. 1 Miller in Section 17-23-8 of the Haynesville Field which prompts the idea that that field has many more years of productive life, though its daily average runs are but a small fraction of its flush production seven years ago. The Miller well is to go 6,000 feet unless commercial production is found around 4,200 feet whence one well made 15 to 25 bbls. a year or two ago and cored the original pay from 2,767-84 feet, the core showing a high degree of saturation.

Richland Operation Co., a Moody-Seagraves company, has rig up for No. 1 Taylor in Section 24-16-6, a half mile northeast of its No. 1 Godfrey which extended producing territory about a mile east two or three weeks ago. Dixie Oil Co.'s No. 91 Dillon in Section 14-21-15, Pine Island district of Caddo Parish, evidently will be a gas well if completed at its present depth. It made a show of about 1,000,000 feet from 3,597 feet and is bailing to test. No. 92 on the same lease but in Section 13-21-15, is drilling lime at 6,019 feet.

### Daily Average Runs

Daily average runs from the field show an increase of 800 bbls. over the district's last week's shipments. Louisiana pools' runs were off 125 bbls. and Arkansas' gained 930, the total daily average being 121,810 of which Louisiana furnished 38,545 and Arkansas 83,265. Champagnolle's new producers during the last two or three weeks raised that pool's average 1,170 bbls. to 11,590 for this week. Otherwise, except for Nevada, where new wells added 155 bbls. to the field's runs, Arkansas pools fell off. Small gains were made in Caddo heavy, De Soto-Red River, Elm Grove and Caddo light oil runs and there was no change in shipments from Homer, Haynesville and Bellevue.

Daily average runs from the several pools were:

| | |
|---|---|
| **Louisiana** | |
| Caddo light | 9,015 |
| Caddo heavy | 3,030 |
| Homer | 4,175 |
| Haynesville | 5,800 |
| De Soto-Red River | 4,015 |
| Elm Grove | 550 |
| Bellevue | 840 |
| Cotton Valley, light | 670 |
| Cotton Valley, heavy | 3,610 |
| Urania | 6,300 |
| Pleasant Hill | 540 |
| Total | 38,546 |
| **Arkansas** | |
| El Dorado | 5,215 |
| Smackover, light | 7,130 |
| Smackover, heavy | 55,040 |
| Stephens | 1,040 |
| Nevada County | 1,870 |
| Lisbon | 1,780 |
| Champagnolle | 11,590 |
| Bradley | 100 |
| Total | 83,265 |
| Both States | 121,810 |
| Last week | 121,005 |
| Increase | 805 |

## NORTH LOUISIANA

### Bossier Parish

Elm Grove and Sligo—Arkansas Natural Gas Corp. completing No. 7-A Van Hoose in Section 31-16-11 immediately made location and has derrick up for No. 8-A on the same lease 1,360 feet south and 660 feet east NW cor. of the section. Barrett & Morgan are drilling No. 1 Jones, Section 16-17-11, at 700 feet.

### Caddo Parish

Oil City—L. M. Emlet is arranging to make a drill stem test on No. 9 Glassell, Section 10-20-15, at 2,240 feet. Magnolia Petroleum Co.'s No. 3 Caddo Levee Board, in section 7-20-15, is coring lime at 2,956 feet. H. M. Mattson cemented 4½-inch at 2,290 feet (corrected depth) on No. 1 Boisseau in Section 34-21-16. Shreveport Oil Corp. cemented 6-inch at 2,217 feet on No. 1 Hutchinson, Section 32-21-15.

Pine Island—Dixie Oil Co.'s No. 91 Dillon, Section 14-21-15 is bailing to test after a show for about 1,000,000 feet of gas at 3,597 feet and No. 92 in Section 13-21-15, is drilling lime at 6,019 feet. No. 6-B Files & Mabry, a workover in Section 14-21-15, is fishing for cable tools, total depth 3,773 feet. Magnolia Petroleum Co.'s No. 18 Robertshaw, Section 24-21-15, is drilling lime at 2,519 feet and No. 23 in Section 23-21-15, is in lime and shale at 2,308 feet.

### Claiborne Parish

Haynesville—Smitherman & McDonald and others' deep test, No. 1 Miller, in Section 17-23-8, is drilling sandy shale at 3,050 feet after coring the old Haynesville pay from 2,767-84 feet, the core showing a still heavily saturated condition.

### LaSalle Parish

Urania—Ayers Brothers have derrick up 1,060 feet east and 150 feet south NW cor. SW NW Section 30-10-2e for

(Continued on Page 106)

## MOREHOUSE PARISH DEEP WILDCAT GETS 5,000 BBLS. OF SALT WATER

By D. H. Bancroft

SHREVEPORT, La. Oct. 27.—One more was added to the list of fatalities in the deep wildcat campaign in Northeastern Louisiana when Gulf Refining Co. abandoned No. 1 School, in Section 16-18-6 Morehouse Parish. The well picked up a sand at around 2,650 feet and set 6⅝-inch at 2,641 feet. When they drilled in to test the sand they found it all right, but 5,000 bbls. of salt water along with it. Similar results were obtained on the test of R. O. Roy's No. 1 Whitaker in Section 5-13-13 DeSoto Parish, which he is deepening from a prior dry test at 2,500 feet. The test this week was dry at 2,778 feet but drilling was not stopped. Also, Triangle Drilling Co. and others' No. 1 Bulkley, a deep test in Section 9-20-13 Bossier Parish, didn't show up so well. It, too, is being deepened from prior tests in shallower horizons, and at 3,125 feet, total depth, it had 8 feet of sand which showed salt water on drill stem tests. It is shut down for orders but will probably go on to 3,500- or 3,600 feet. Enochs and others claim to have a sand at 3,520 feet in their No. 1 Curry, Section 39-11-12 Tensas Parish, and were to bail Friday but didn't. A shallow test in Franklin Parish, Davis and others' No. 1 Moore, Section 12-11-6, was dry at 685 feet and is shut down for orders.

### Wildcats Abandoned

Locations for four wildcats were abandoned without being drilled, three of them on the west side of Champagnolle deep sand area where salt water has been the rule. Root Refineries abandoned plans for drilling No. 1 Davidson, in the SW cor. NW SE Section 21-17-14, north of the small well it got on the Jerry land some time ago, and also No. 1 Ed Doss, in the NW cor. SW NE Section 16-17-14. The Texas Company abandoned location for No. 2 Moody, in the SE cor. SE NW of the same section. The fourth location abandoned was Carter & Wingfield's No. 1-A Clark in the SE cor. NW SW Section 7-23-1e Union Parish. Their No. 3 Security Trust in Section 23-23-1e was dry at 2,195 feet and is going deeper.

Joe Marr's No. 1 Sloan, in Section 14-17-15, 4 miles west of nearest production in Champagnolle was dropped from the report after standing shut down for orders after salt water test at 3,392 feet three months ago. Simrall and others' No. 1 Finley in Section 12-17-14, the

(Continued on Page 111)

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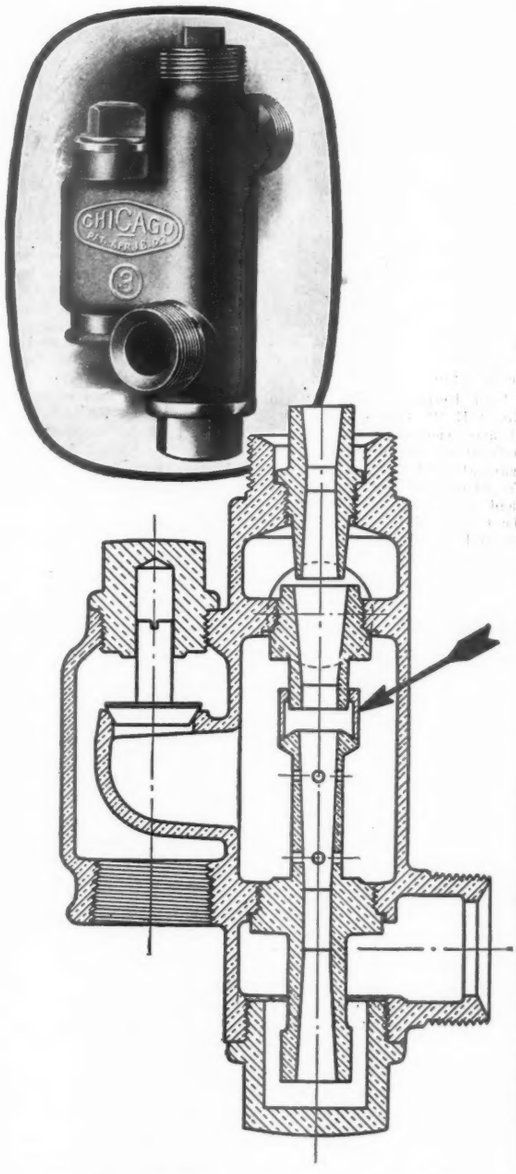


*The Arrow Points to Ring "C"—Just a little moving part, yet vital to successful operation. In the "Chicago" Injector, this Ring seats on the Forcing Tube by gravity and vacuum, instead of being held against the Lifting Tube by vacuum alone. This "gravity-plus-vacuum" principle assures much quicker and more positive action than would be possible by vacuum alone.*

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## "CHICAGO" AUTOMATIC INJECTORS...

# Revival of Wildcatting on Gulf Coast

## Reported Checking of a Dozen New Dome Prospects Starts Rush. Boling Dome Extended to the North

By Neil Williams
*Staff Correspondent, Gulf Coast Fields*

HOUSTON, Tex. Oct. 29.—Except for another substantial extension of production around the Boling Dome, there were no actual field developments of importance in Gulf Coastal territory the past week but an active torsion balance play together with an extensive wildcat leasing program prevented the week from being quiet.

The reported checking of more than a dozen new dome prospects in the Texas coastal area in the last two months apparently has started another "Klondike" rush in this district with not only the larger companies taking part but also smaller operators and independent leasing companies and individuals. The center of interest seems to be in that territory west of Houston, including Harris, Fort Bend, Brazoria, Matagorda, Wharton, Waller, Austin, and Colorado Counties.

Leasing evidently is not confined to any particular areas with nearly all companies and operators checkerboarding rather promiscuously any district which looks at all favorable and in which any leasing is started by others. That the Coastal district is due for a revival of wildcat play is demonstrated in the fact that one of the major operating companies has an appropriation of $7,000,000 for immediate wildcatting and acreage buying.

Although wildcatting for salt domes on the Gulf and development of these domes for production for several years has been considered chiefly a large company proposition, because of the heavy costs involved and the uncertainties of salt dome development, the present play is bringing in many of the smaller operators and lease men.

The increasing availability of the torsion balance instruments and crews on a rental basis is enabling leasing men to go out and take options on large tracts and have these tracts worked with the instruments for possible salt domes. In the majority of cases these options can be obtained without cost with the provision that the land will be leased at a specified amount if a dome is found. Land owners are anxious to have their property checked for possible domes because of the increased leasing value and if a dome is not checked no one is out anything except for the rental of the torsion balance.

Of recent wildcat interest has been the leasing of large blocks in the Eagle Lake district of Colorado County by nearly all the major companies. This, however, was not taken up as a salt dome possibility or as the result of any geophysical work but rather as a possible structure play. A location was made the past week for the first test, this being by The Texas Company. The test will be No. 1 Hoyo, 3,200 feet northeast and 2,400 feet northwest of the S cor. Patrick Reels Survey, almost in the townsite of the town of Eagle Lake.

### Boling Dome Extension

Production around the Boling Dome was extended approximately 3,000 feet north on the east flank by The Texas Company's No. 1 Bushnell, which came in last Friday flowing 400 bbls. of oil with less than 1 per cent of water. Saturday the well was flowing at the rate of 800 bbls. of fluid, 15 per cent water. Two joints of 4¾-inch screen were set with the bottom of the hole at 3,937 feet. The oil tested 21.5 degrees corrected gravity.

This well makes the fifth producer to be brought in on the wildcat east flank of the dome, where an extensive wildcat drilling play has been going on all year. All these wells have been completed since May, when the first well, Hyde Production Co.'s No. 1 Fotjek came in making 200 bbls. daily. Previous production had been confined to the shallow cap rock and to the southwest flank. The east side wells are in Fort Bend County while the remainder of the production is in Wharton County.

### Good Well at Blue Ridge

At Blue Ridge on the south side Humphreys Corp. brought in a 1,200-bbl. well in its No. 4 West-Schenck, which is producing from sandy shale at 3,758 feet. This was the largest well completed during the week, which was marked by the completion of relatively few producers. Caddy Telly Oil Co.'s No. 1 Blakely at Blue Ridge started off flowing 250 bbls. of 24 gravity oil at 2,584 feet.

At Pierce Junction, Shaw and associates' No. 3 Fitzsimmons, on the north side, came in flowing 750 bbls. of 29.4 gravity oil at 4,503 feet with 30 feet of screen. Gulf Production Co.'s No. 24 Morris-Phillips at Hull was completed at 3,694 feet flowing 600 bbls. This well, formerly abandoned as dry, was drilled jointly with The Texas Company. Gulf Production Co.'s No. 7 George Smith at High Island, an old well worked over, was put on the pump for 10 bbls. Liberty Petroleum Co.'s wildcat Turner well at South Liberty finally was completed during the week flowing 80 bbls. The latter is the well which during the previous week cut out connection and blew wild flowing as high as 1,000 bbls. daily for a time. Ada Belle Oil Co.'s No. 123 Honeymoon, a shallow Batson well, is pumping 5 bbls. net at 470 feet.

In Louisiana at Lockport, Calcasieu Parish, Vacuum Oil Co. and Gulf Refining Co. completed No. 7 Miller, a workover, at 4,428 feet flowing 500 bbls. of which all but 2 per cent was oil.

### Failure at DeWalt

Abandonments included the first failure at the new DeWalt Dome. This was Humble Oil & Refining Co.'s No. 1 Deatherage, which bailed salt water from a sandy shale at 3,810 feet. This test had been drilled into the salt to 4,310 feet and then plugged back. Humble's No. 4 Warren also probably will be abandoned in heaving shale at 4,828 feet. Yount Lee Oil Co. abandoned another East Hackberry test, No. 18 Kelso Bayou, it testing salt water at 3,617 feet after backing up from the salt. Navarro Oil Co. abandoned No. 1-A Robinson, Blue Ridge, at a total depth of 4,014 feet, it being an old well deepened. Sun Oil Co. also has abandoned temporarily its No. 4 Gunstream at Orange.

Daily average production of Coastal fields for the week ending October 27 totaled 133,787 bbls., an increase of 2,574 bbls. The increase was due only to natural fluctuations in the various fields. Figures for the Coast and for Southwest Texas are:

**GULF COAST**

| Texas | |
|---|---|
| Allen Dome | 8 |
| Barbers Hill | 3,010 |
| Batson | 1,406 |
| Big Creek | 2,191 |
| Blue Ridge | 6,210 |
| Brenham | 159 |
| Boling | 1,585 |
| Damon Mound | 717 |
| DeWalt | 1,883 |
| Fannette | 34 |
| Goose Creek | 6,724 |
| High Island | 499 |
| Hull | 12,121 |
| Humble | 3,187 |
| Markham | 335 |
| Nash Dome | 1,100 |
| North Dayton | 690 |
| Orange | 3,668 |
| Orchard | 179 |
| Pierce Junction | 12,348 |
| Raccoon Bend | 370 |
| Saratoga | 1,008 |
| Sour Lake | 3,145 |
| South Liberty and South Dayton | 3,887 |
| Spindletop | 39,688 |
| West Columbia | 7,482 |
| Total this week | 113,634 |
| Total last week | 110,763 |
| Increase | 2,871 |
| **South Louisiana** | |
| Anse La Butte | 60 |
| Atchafalaya | 910 |
| East Hackberry | 3,700 |
| Edgerly | 871 |
| Evangeline | 911 |
| Lockport | 3,149 |
| Loreauville | 6 |
| Sorrento | 716 |
| Starks | 702 |
| Sulphur | 3,000 |
| Sweet Lake | 2,000 |
| Vinton | 4,098 |
| Welsh | 30 |
| Total this week | 20,153 |
| Total last week | 20,450 |
| Decrease | 297 |
| Total Gulf Coast | 133,787 |
| Total last week | 131,213 |
| Increase | 2,574 |
| **Southwest Texas** | |
| Dale | 837 |
| Kingsville | 334 |
| Luling | 14,465 |
| Lytton Springs | 1,204 |
| Somerset | 1,990 |
| Miscellaneous | 10,190 |
| Total this week | 29,020 |
| Total last week | 29,238 |
| Decrease | 218 |

### Barbers Hill—Chambers County

Humphreys Corp.'s No. 8 Higgins is drilling rock at 370 feet. The same company's No. 3-A Barber has spudded in and a rig is up for No. 1-C Kirby. Bennett Production Co. is rigged up and ready to spud in its No. 2 Kirby, the latter being 11 feet north of No. 1 Smith, completed for 4,000 bbls. several weeks ago and which still is making around 2,400 bbls. daily with no water. Yount Lee Oil Co. has made a couple of locations on the southwest flank of the dome more than a mile distant, these being No. 1 Chambers County and No. 1 Richardson.

### Blue Ridge—Fort Bend County

Moody Corp.'s No. 3 West-Schenck on the south side of the dome is drilling hard sand at 2,810 feet. J. S. Abercrombie's No. 4 West-Schenck, same district, is drilling sidetracked hole at 2,346 feet. Gulf Production Co.'s No. 12 Luscher, east flank, is drilling below 4,332 feet. The latter company's No. 15-B Blakely is drilling gummy shale and lime at 3,616 feet. South Texas Production Co.'s (H. R. Cullen and associates) No. 1 Gabe Lee, which was completed last July flowing 600 bbls. net oil at 3,816 feet, has stopped flowing and is to be deepened. Navarro Oil Co. has abandoned its No. 1-A Robinson on the northwest flank after drilling to 4,014 feet. Watts Oil Co. probably will abandon its No. 8 Blakely but is starting up on No. 9 Blakely.

### Big Creek—Fort Bend County

Navarro Oil Co. still is working on its No. 2 Hausler in trying to test a sand at 3,474-3,500 feet. Drilling of No. 2 Davis, for which a derrick is up, is waiting on the rig of No. 2 Hausler. The Texas Company's No. 4 Wheat is rigging up. Gulf Production Co.'s No. 49 Davis is drilling sandy shale at 3,539 feet. The latter company is rigging up to deepen its No. 27 Davis, an old well.

### Nash Dome—Fort Bend and Brazoria

Rycade Oil Corp. was swabbing its No. 13 Wisdom late in the week. It was showing oil and wash water but would not flow and tubing now is being run. It is in a sand at 3,822 feet. No. 24 Wisdom is sidetracking at 3,822 feet. Rycade and Humble Oil & Refining Co.'s joint No. 1 Wisdom is drilling at 2,225 feet.

### Hardin County Domes

At Batson, Gulf Production Co.'s No. 20 Knight fee is drilling at 586 feet. Deutser Oil Co.'s No. 17 Trustee is down 796 feet. Paraffine Oil Co.'s No. 78 fee is drilling at 957 feet and East Batson Oil Co.'s No. 12 Donohue at 1,110 feet. Lakeview Oil Co.'s No. 56 Hardin, Sour Lake, is at 984 feet. At Saratoga, Rio Bravo Oil Co.'s No. 28 Teel is drilling gumbo at 800 feet. E. W. Skinner's No. 1 Sessler is drilling sidetracked hole at 2,177 feet. Weldon Oil Co.'s No. 8 Kirby is drilling at 643 feet and Paggi Brothers' No. 47 Queen City at 1,117 feet.

### Pierce Junction—Harris County

H. R. Cullen's No. 5 Howe on the east side of the dome is in a deep sand around 5,700 feet which probably will be tested. Gulf Production Co.'s No. 6 Cain is drilling sidetracked hole at 4,254 feet and the latter company's No. 26 Taylor is in hard shale and lime at 3,634 feet. Navarro Oil Co.'s No. 11 Dooley is drilling shale and lime at 4,417 feet.

On the north flank, Moody Corp.'s No. 1-A Whitehead is drilling shale at 4,867 feet and No. 3-B Whitehead is spudding. Rio Bravo's No. 9 fee, west flank, which tested salt water at 4,449 feet the past week, now is drilling deeper at 4,645 feet in shale. The latter's No. 10-B Settegast is in sandy shale at 844 feet. No. 11-A Settegast is drilling sand rock at 1,466 feet. Shaw and associates are rigged up for No. 1-D Fitzsimmons on the north flank.

### Goose Creek—Harris County

Gulf Production Co.'s No. 13 Briggs which was put on the pump, making only salt water, has been shut down and is standing. The latter's No. 17-A Tabb is drilling at 1,576 feet, and its No. 12 Stateland Producers at 1,391 feet. Humble Oil & Refining Co.'s wildcat, No. 74 Simms Smith, northeast of the field, is drilling sticky shale at 4,359 feet. This company's No. 3 Jones Stateland still is bailing at 2,619 feet. Jim McMurry's No. 3 Grace Addey is waiting on drill pipe to go deeper after testing salt water at 2,448 feet.

### Spindletop—Jefferson County

Yount Lee Oil Co. has set screen in two tests to test sands, these being No. 49 Gladys City at 2,650 feet, and No. 20 McFaddin at 2,758 feet. This company's No. 16 Gladys City is drilling sand and lime at 4,356 feet. No. 70 Gladys City is in shale at 4,935 feet and No. 71 Gladys City is in sand at 3,712 feet. No. 40 is pulling screen at 4,029 feet to deepen.

On the McFaddin lease, Yount Lee Oil Co.'s No. 31 is drilling shale at 4,963 feet. No. 82 is in shale and lime at 3,802 feet. No. 83 is in shale and lime at 4,920 feet and No. 84 is in gumbo and lime at 1,473 feet. No. 33, an old well to be worked over, is sidetracking at 4,488 feet, total depth of the hole being 4,822 feet.

Yount Lee Oil Co.'s No. 6 fee is drilling sand and shale at 3,503 feet, and its No. 12 fee, an old well, is cleaning hole at 3,056 feet to deepen. No. 3 Davis is in sand and shale at 3,674 feet.

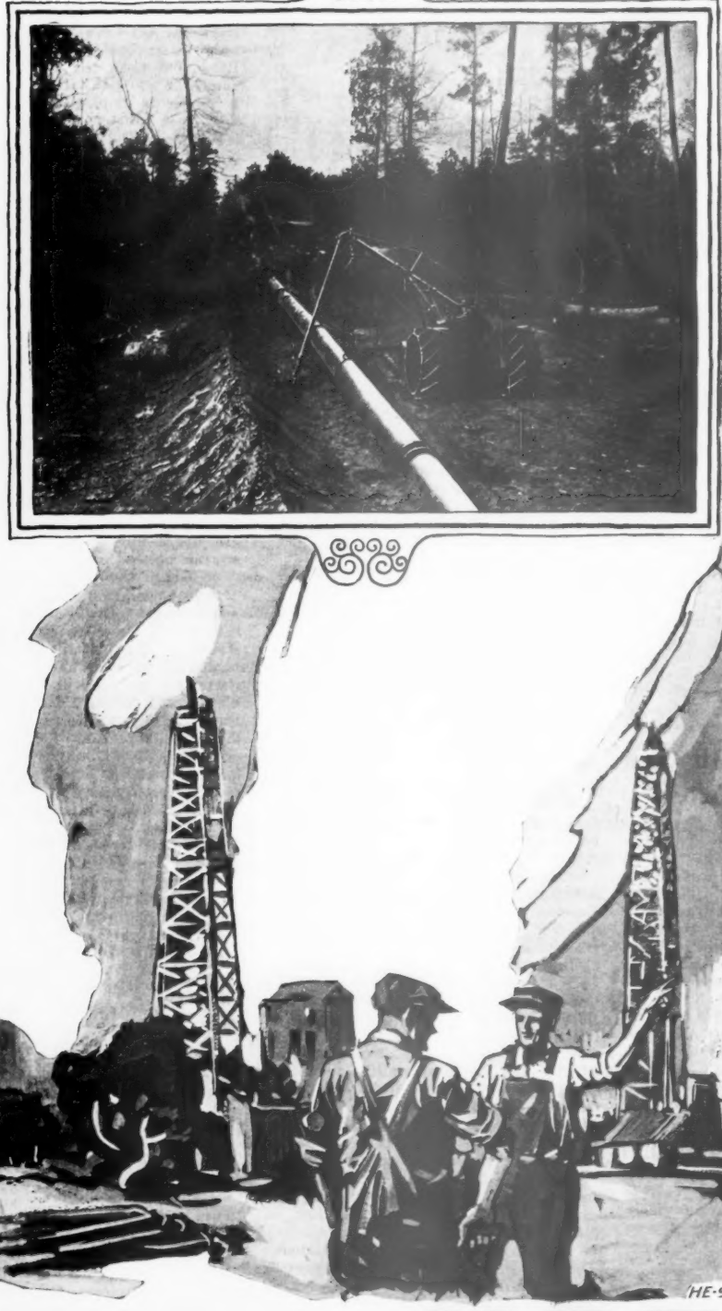
Unity Petroleum Co.'s No. 98 McFaddin is in a shallow sand at 900 feet and has set 6-inch casing to test. L. A. Painter's No. 2 Ewing & Ring is drilling at 3,300 feet and No. 3 at 2,700 feet. No. 1 was abandoned earlier in the week after testing salt water. Gulf Production Co. is sidetracking at 5,020 feet in its No. 17-A Marrs McLean, an old well to be worked over.

### Hull—Liberty County

Big Six Oil Co.'s No. 2 Stovall pumped salt water and is standing with bottom of hole at 258 feet. Empire Gas & Fuel Co.'s No. 17 Barngrover is to be put on

(Continued on Page 112)

# Unified Responsibility

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# Lea County Wells at Interesting Stage

## Two Marland Tests Running High. Texas Production Co.'s Rig on 10,000,000-foot Gasser Burned. Utah Tests Attract Attention

By Tolbert R. Ingram
*Staff Correspondent, Rocky Mountain Area*

DENVER, Colo., Oct. 27.—In Lea County, southeastern New Mexico, the Texas Production Co.'s No. 1 Cagle, encountered a flow of 10,000,000 feet of gas at 2,857 feet and rig was burned down. Two of the Marland tests in this area are running high and are at an interesting stage, while the Gypsy Oil Co.'s No. 1 Ramsey, farther to the north, has resumed drilling after mudding off gas. The Midwest Refining Co.'s No. 19 Farnsworth, in the southern part of the county, has 1,750 feet of oil in the hole from a new horizon. The Artesia Pool had one completion, a 50-bbl. well, the first for some time.

Several Utah tests are attracting special attention at this time. The Utah Southern Oil Co.'s wildcat in Uinta County, which will explore the Tertiary formations, is getting a good start, and the same company's Cane Creek well is making some gas and has so far missed the salt core. The same company's Salt Valley Dome well has run into water heavily saturated with salt and cut oil at 1,478 feet.

In Colorado, two Iles Dome wells of the Midwest Refining Co., reported producers last week, have been completed and made 300 and 205 bbls. respectively. The Phillips Petroleum Co.'s test in Las Animas County probably will be abandoned. The Ohio Oil Co.'s No. 1 State on the Hiawatha Dome in Moffat County found water in the sand in which oil or gas was expected and is drilling deeper.

In Wyoming, the R. H. Rosenberg discovery well on the Frannie structure has increased its flow to an average of 350 bbls. per day and examinations of cuttings indicate that it was not actually drilled into the true Embar but is producing from a stray sand 50 feet above that horizon. A new test in Fremont County to explore the Dakota, Morrison and Sundance horizons on the Pilot Butte Dome is being started by the Parker Club, Inc., and the Kinney-Coastal Oil Co. A 20,000,000-foot gas well and one 50-bbl. oil well were completed in the LaBarge Field in Sublet County.

### New Mexico

Interest in southeastern New Mexico operations was about equally divided this week between several important tests. The Texas Production Co.'s No. 1 Cagle, SW NE SW, Section 9-26-37, encountered gas at 2,857 feet. The gas caught fire and the rig was burned down. The fire has been extinguished and location now is being cleared. The quantity of gas was estimated at 10,000,000 feet. This well, a joint operation with the Amerada corporation and the Columbian Carbon Co., is located 2½ miles northeast of Marland's No. 1 Eaves gas well, the same distance north and a little west of The Texas Company's No. 1 Rhoades, a gas well, and approximately the same distance west of the Midwest Refining Co.'s No. 19 Farnsworth, which is showing some oil. It is in very interesting territory and appears to be running high. It topped the salt at 1,110 feet and the lime at 2,680 feet. The Marland Production Co.'s No. 1 Lynn, NW cor. SE, Section 26-23-36, approximately 17 miles north of the Eaves gasser, is reported showing some oil and is being closely watched. It is bottomed at 2,975 feet in lime and shale and is coring. The same company's No. 1 Brooks, NW cor. SW, Section 8-20-33, located 33 miles to the northwest of the Eaves well, also appears to be running high. It is bottomed at 2,880 feet and clamping up the 8¼-inch casing. It topped the lime at 2,865 feet and should be showing some results very shortly. The Gypsy Oil Co.'s No. 1 Ramsey, SW cor. Section 34-21-36, in the Eunice district, which showed for 25,000,000 feet of gas at 3,230-90 feet, is bottomed at 3,352 feet where the gas has been mudded off. It was scheduled to resume drilling October 24.

#### Second Important Show

The Midwest Refining Co.'s No. 19 Farnsworth, SW SW, Section 12-26-37, is drilling at 3,706 feet in lime and has 1,750 feet of oil in the hole. This is the second important show, the other being at 3,450-60 feet from which horizon it made about 8 bailers per hour. This well appears to be on the eastern side of the structure and so far has not encountered any flows of gas comparable with the wells 2 to 5 miles to the southwest. One new location in this general area is Henderson, Dexter & Blair's No. 1 McDonald & Jewett, SE cor., Section 18-20-34. The Skelly Oil Co.'s No. 1 Joyner, NE cor. SE, Section 26-25-36, set the 10-inch at 3,005 feet, at which depth it had a show of oil, and is waiting for the cement to harden. It bottomed the salt at 2,950 feet. The Maljamar Oil & Gas Co.'s No. 2 Pearsall, NE NE, Section 33-17-32, in the Maljamar area, commenced spudding on October 15 and is drilling at 158 feet. The C. E. Reynolds Drilling Co.'s No. 1 Anderson, C SE, Section 29-13-37, is drilling at 4,965 feet in anhydrite, and Cranfill & Reynolds' No. 1 State, SE NE, Section 23-26-36, is drilling below 1,600 feet in the red beds. The Texas Production Co.'s No. 1 Moberly, NW SE, Section 17-26-37, is drilling at 2,310 feet. It topped the salt at 1,210 feet. Same company's No. 1 Shepherd, SE cor. NE, Section 6-26-37, is fishing for tools at 2,895 feet.

The Marland Production Co.'s No. 1 Sholes, NW cor. SW, Section 19-25-36, 6 miles north of its Eaves gasser, appears to be making some progress towards getting the hole in shape to drill deeper. It is bottomed at 3,030 feet where it came in early last August making 50,000,000 feet of gas. It has been endeavoring to recover the tools and kill the gas. It is jacking on the 6¼-inch casing and it is coming out of the hole slowly. Same company's No. 1 Warren, SW SW, Section 28-20-38, near Nadine, is rigging up, and its No. 1 Lockhart, NE cor. SW, Section 22-20-36, is rigged and waiting for completion of water well which is drilling at 360 feet. The Marland's No. 1 Lockhart, NW NW, Section 31-21-36, is drilling at 670 feet in the red beds, and its No. 1 Slattery, SW cor. NE, Section 7-22-35, is drilling in the red beds at 1,055 feet. Same company's No. 1 Danciger, SW cor., Section 7-23-36, is drilling at 2,965 feet in salt, and its No. 1 King, NE cor., Section 26-25-32, is drilling at 3,660 feet in soft gray lime. The Marland's No. 1 Meyer, SW cor. NW, Section 26-20-37, is bottomed at 560 feet and running the 15½-inch.

#### Completion in Artesia

The Artesia Pool in Eddy County had a completion this week, the first one for some time, in Flynn, Welch & Yates' No. 55, SE NW NE, Section 32-18-28. It found the pay in sandy lime at 2,008-37 feet and is estimated good for 50 bbls. Better prices for crude undoubtedly would result in an increase in activity in this pool. The same company's No. 1 Jackson, C NE, Section 13-17-30, which is so located that it may catch the trend of the pool in southern Lea County, is drilling below 3,110 feet after passing up a show of 1 bailer per hour of oil at 2,910 feet and 2,500,000 feet of gas at 2,925-35 feet.

A new location in Roosevelt County is Sloan & Smith's No. 1 Lovern, C SE, Section 4-3s-35e, approximately 9 miles southeast of Portales.

In Chaves County, Snowden & McSweeney's No. 1 Merchant, NW NW, Section 27-15-23, on the Coontail structure, is drilling at 3,180 feet in lime and gypsum, and R. T. Neal and others' No. 1 Russell, NW NW, Section 21-14-25, near Hagerman, is bottomed in sandy lime at 1,018 feet and underreaming the 8¼-inch casing.

#### San Juan County

In northwestern New Mexico the principal activity is in San Juan County which yielded a little more than the usual news this week. The Midwest Refining Co.'s No. 22, SE SE, Section 36-22-14, on the Stony Butte structure, is not looking very encouraging. It is drilling at 1,855 feet in a gray water sand with the hole full of water. This well showed some oil in the upper measures. It tested 6 bbls. of oil and 48 bbls. of water at 775-91 feet, and 30 bbls. of oil at 840-70 feet. The 12½-inch was set at 1,087 feet and below that depth it had more water. In this district two other wells are drilling. H. L. Hall and others' No. 1, NW cor., Section 18-22-13, is below 900 feet, and R. R. Burke and others' No. 1 Deneen, NW NW, Section 18-21-13, is drilling below 300 feet. In the Bloomfield district, the Fidelity Oil & Refining Co. is reported to have a gas well in its No. 2 Abrams, NE NW, Section 23-29-11, at a little below 800 feet. This operation was taken over some time ago from R. M. Smith who drilled the well to 532 feet last year.

The Iowa Oil Syndicate's No. 1 Viles, SE cor., Section 28-29-11, is the Kutz Canon district, is bottomed at 663 feet where it had a show of 58 gravity oil. The 6⅝-inch casing is being underreamed and lowered to make a water shutoff after which the oil show will be tested to see if it is commercial. The Blackrock Oil Co.'s No. 2 Swineburne, SE SW, Section 11-25-13, set the 10-inch at 1,250 feet and is shut down waiting for a smaller string to be delivered before drilling is resumed. The Continental Oil Co.'s No. 17, Section 2-29-19, on the Rattlesnake Dome, is still fishing at 6,338 feet. This hole is bottomed in the Pennsylvanian and had a show of gas at 6,292 feet. It will be carried to around 7,000 feet, if possible, unless production is encountered above that depth.

### Utah

A test in Utah which will come in for some close attention within the next few weeks' drilling is the Utah Southern Oil Co.'s No. 1 Farnsworth, SE cor., Section 29-4s-1e, on the Pleasant Valley structure near Myton in Uinta County. This well, which is bottomed at 250 feet in brown shale, is in the Uinta Basin, a region receiving considerable attention. It will test the Uinta and upper Green River formations of the Tertiary age and is expected to cut five or six sands within 3,000 feet, the first objective being logged at around 1,000 feet. The region is described by geologists as being "oil country" due to very liberal evidences

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## PROVES 2,000 ACRES DEEP LIME TERRITORY IN TURNER VALLEY

By Victor Lauriston
*Staff Correspondent, Canadian Fields*

CHATHAM, Ontario, Oct. 27.—In the north end of the Turner Valley Field, Foothills Oil & Gas Co.'s No. 1, SW, Section 26-20-3w5, has got production at 5,915 feet, thereby proving some 2,000 acres of additional "deep lime" territory. A production test, now in progress, indicates between 6,000,000 and 8,000,000 feet of wet gas, with a crude naphtha recovery of around 75 bbls. a day. The production was struck at 565 feet in the lime. This is the deepest producing well in Canada.

Royalite Oil Co.'s No. 14, LSD 4, Section 7-20-2w5, is making up drill pipe preparatory to drilling into the deep lime. This test got the lime at a high point, 3,220 feet, and a big producer is generally looked for. Royalite's No. 9, LSD 6, Section 13-20-3w5, is drilling deeper into the lime at 5,593 feet. Royalite's No. 12, LSD 3, Section 13-20-3w5, is drilling at 2,689 feet; and No. 13, LSD 6, same section, at 3,868 feet. Royalite's No. 16, LSD 2, Section 12-20-3w5, is standing cemented at 3,425 feet; and No. 17, LSD 13, Section 6-20-2w5, stands cemented at 3,460 feet. Other Royalite wells drilling are: No. 18, LSD 15, Section 12-20-3w5, at 2,581 feet; No. 19, LSD 5, Section 6-20-2w5, at 2,455 feet; No. 20, at 480 feet; and No. 22, Section 13-20-3w5, at 2,405 feet.

Home Oil Co.'s No. 1, LSD 10, Section 20-19-2w5, is at 5,108 feet and running 6¼-inch casing; and Home's No. 3, LSD 14, same section, is drilling at 3,623 feet. Foothills Oil & Gas Co.'s No. 2, LSD 8, Section 1-20-3w5, is drilling at 3,046 feet. Northwest Associated's No. 1, LSD 6, Section 20-19-2w5, is shut down at 200 feet waiting for a rotary crew.

McLeod Oil Co.'s No. 4, LSD 16, Section 1-20-3w5, is maintaining a crude naphtha production of 100 bbls. a day from the deep lime. McLeod's No. 1, same LSD, is making around 20 bbls. McLeod's No. 3 is drilling at 4,705 feet, 90 feet above the lime, and carrying down 6¼-inch casing.

#### Flowing by Heads

Calmont Oils, LSD 2, Section 1-20-3w5, is shut down with a broken bend wheel, after carrying the new hole to about 5,640 feet. Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is at 4,994 feet, about 70 feet in the lime, and flowing by heads. The separator has collected about 60 bbls. a day, though drilling is proceeding. The test will be carried to about 5,075 feet before making a production test. Okalta's No. 3, LSD 9, same section, is drilling around 1,750 feet.

Seneca Oils, LSD 1, Section 34-20-3w5, is at 4,878 feet and pounding up a lost bailer.

Spooner Oils' No. 1, LSD 12, Section 13-20-3w5, is in production in the deep lime at around 5,280 feet and is being given a production test. It is making around 7,000,000 feet a day, with between 75 and 100 bbls. of oil. The diamond drill is being dismantled and moved to Vulcan Oils' No. 1 producer, LSD

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# Kern River Releases 10,100 Bbls. Daily

## Effect of Breaking Down of Curtailment Program There. New Nordstrum Zone Between Meyer and Buckbee at Santa Fe Springs

By L. P. Stockman
*Staff Correspondent, California Fields*

LOS ANGELES, Calif., Oct. 27.—Santa Fe Springs was forced to share the spotlight with Kern River during the past week as developments in both districts were of the utmost importance. The curtailment agreement between operators in the latter field was abrogated after being in effect since last April and 10,100 bbls. per day of heavy crude oil production was opened up on October 20, although it will require several days before this entire amount will be reflected in daily production. George F. Getty resumed operations first by starting production activities on the Lehnhardt, Tegeler, Grady, McDougall and Lightner leases where 60 wells and 5,100 bbls. per day of heavy unrefinable crude were shut down on April 5. The Associated and General Petroleum were forced to follow suit due to stringent lease requirements and the necessity of protecting their respective holdings from undue drainage. This resulted in the opening up of 15 wells and 2,000 bbls. per day of heavy crude by the former company and 31 wells and 3,000 bbls. by the latter. The Texas Company, Union, Standard, Chanslor-Canfield Midway Oil Co., Petroleum Securities, St. Helens Petroleum and the Bishop Corp. are still sitting tight as production activities have not yet been resumed up to the present time.

The Standard Oil Co. reduced the price of heavy crude 25 cents per barrel simultaneous with the opening up of production along the Kern Front on October 20 and this heavy unrefinable crude is being paid for at the rate of 50 cents per barrel. Heavy crude and fuel oil has been a considerable burden to refiners for a long time and earlier in the month, October 2, the Standard established a new price schedule for Kern County crude below 14 degrees A.P.I., although this will not affect existing purchase contracts. No price schedules have heretofore been established on heavy oil below 14 degrees although heavier crude has been purchased for a number of years at the prevailing base price paid for oil of 14 degrees. Quotations for 11 gravity crude were posted at 45 cents per barrel on October 2 for the first time, 12 and 13 gravity crude being fixed at 55 and 65 cents per barrel, respectively. These quotations cover all crude oil to be purchased by the Standard in Kern County, but with the reduction on October 20 in the price of heavy crude produced in the Kern River Field the company was forced to again revise price schedules for heavier oil. An adjustment was accordingly made on the same day and, although 11 gravity crude in Kern County remained at 45 cents per barrel, 12 and 13 gravity oil was reduced from 55 and 65 cents to a flat 50 cents per barrel.

### New Zones at Santa Fe Springs

Developments at Santa Fe Springs remove any doubt as to the potentiality of the oil sands underlying the Meyer zone. One of the most interesting features in connection with the intensive drilling campaign now under way is that two separate and distinct oil zones have been discovered below the Meyer horizon. The Buckbee zone was opened up by the Wilshire Oil Co. late in July when its No. 1 Buckbee came in flowing 3,500 bbls. per day from an oil sand tapped at 5,650 feet. George F. Getty subsequently found another productive horizon at 5,407 feet between the Buckbee and the Meyer zones, although this fact was not definitely appreciated at the time. The intermediate zone found by Getty will probably be designated as the Nordstrum zone as No. 17 Nordstrum was the first well to show commercial production from this sand.

When George F. Getty's No. 17 Nordstrum blew in out of control on September 16 making approximately 10,000,000 feet of gas daily and became ignited almost instantanteously the possible existence of a new horizon was recognized although it was the general consensus of opinion that this intermediate zone was a gas sand devoid of oil. This was proven fallacious, as oil subsequently began showing up in No. 17 Nordstrum. The potentiality of the intermediate Nordstrum horizon was not definitely determined until a few days ago, when engineers succeeded in tapping the 9-inch oil string with three 3-inch lead lines for the purpose of extinguishing the fire which has been burning at the mouth of this well for six weeks. The 9-inch oil string was intercepted 48 feet beneath the surface of the ground, toward which point engineers directed a 240-foot tunnel several weeks ago. The three 3-inch vacuum lines from the 9-inch oil string landed above the Meyer zone were let out through the tunnel and hooked up with a 12-inch suction line terminating at the Midway Gas Co.'s plant. The primary purpose of this hookup was to reduce the volume of gas at the mouth of the well by creating a vacuum 50 feet below the surface and removing a considerable part of the gas and thus diminish the amount of gas available at the surface. After diverting a part of the gas flow the next step contemplated the use of mud and steam in extinguishing the diminished flame issuing from the mouth of the well.

### Getting Gas From Burning Well

There were three strings of pipe in No. 17 Nordstrum when engineers started working in the tunnel 50 feet beneath the surface but the two outer casings were cut away to facilitate work. This left a string of 9-inch which had been landed and cemented above the Meyer zone and 2,600 feet of drill pipe which has been standing suspended from the top of the hole. Very little difficulty was experienced in tapping the 9-inch as a lateral pressure of only 15 pounds is reported to have been encountered. The control work undertaken on this well was exceptionally successful although it is still burning with a diminished force at the surface. George F. Getty's No. 17 Nordstrum, for this reason, is perhaps the most remarkable well in existence. It occupies the unique position of burning uncontrolled at the mouth of the hole simultaneous with a recovered production of 8,000,000 feet of natural gas and 2,500 bbls. of exceptionally clean 34.9 gravity oil daily. The oil and gas is being recovered from the well through the three 3-inch suction lines which were hooked into the 9-inch casing 50 feet below the surface. Instead of merely diminishing the amount of gas at the mouth of the well as was anticipated these vacuum lines stimulated the well's flow. Work is being pushed to bring this well under control at the surface but it will probably be several days before the gas fire at the mouth of the hole can be extinguished and the well capped. In the meantime No. 17 Nordstrum, the first well to secure commercial production in the intermediate Nordstrum zone, will be yielding about 2,000 bbls. of light refining crude and at least 5,000,000 feet of wet gas daily. This well is undoubtedly one of the most unique producers ever drilled. It has been burning continuously since September 16, the longest any California well has ever been out of control, with the possible exception of the old Lakeview gusher in the Midway-Sunset Field of Kern County, which blew in flowing in excess of 50,000 bbls. of oil daily.

### Nordstrum Zone

The existence of a highly productive horizon between the Meyer and Buckbee zones at Santa Fe Springs was also definitely established by the Star Petroleum Co. as this company cored a very rich and heavily saturated oil sand between 4,850 feet and 5,150 feet. The Nordstrum zone, as this intermediate sand will probably be designated, may exceed 300 feet in thickness on the apex of the structure. This is especially significant and while the California State Mining Bureau has not yet formulated any definite casing program this will probably be done soon. Immediate action should be taken to protect this oil and gas zone from contamination by drilling mud and the intrusion of water from intermediate water sands known to exist. The intermediate Nordstrum zone will be passed up by the majority of operators in their rush to participate in the flush production of the deep Buckbee zone and this horizon will consequently suffer from fast, careless drilling unless a definite program is laid down. The Mining Bureau will probably take a very definite stand at once and afford this zone a maximum of protection as there are 14 drilling projects below the 5,000-foot level and 91 more rotating between 4,000 and 5,000 feet.

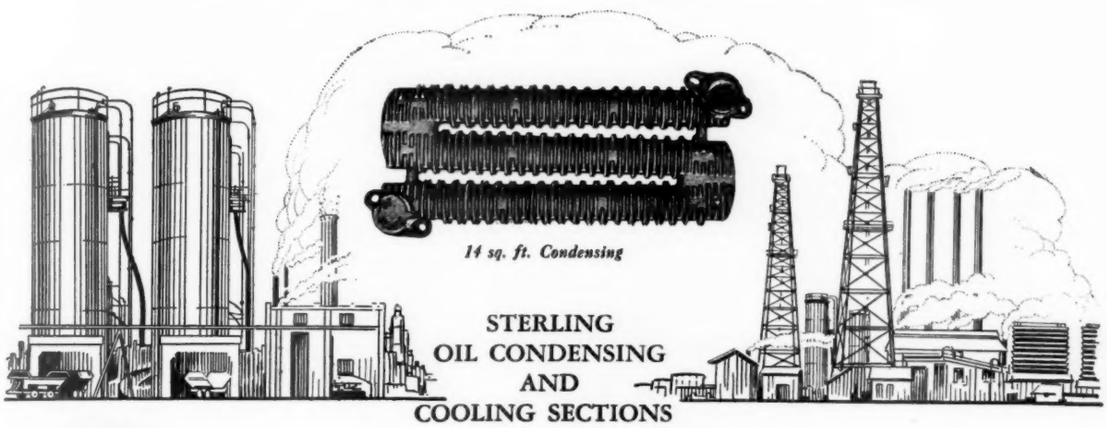
### IMPORTANT SOUTHERN CALIFORNIA WILDCATS

| Company, well and location— | S-T-R | Depth | Status |
|---|---|---|---|
| Ring Pet. Co., No. 1 Inglewood, Los Angeles Co. | 28- 2-14 | 4,352 | suspended |
| Mont. Park Oil Co., No. 1 Browning, Monterey Park | 26- 1-12 | 4,420 | suspended |
| Mont. Park Pet. Co., No. 1 Jepson, Monterey Park | 25- 1-12 | 3,000 | sd. sh. drilling |
| World Pet. Corp., No. 1 Bell, Los Angeles Co. | 22- 3-12 | 2,915 | suspended |
| Associated, No. 1 Taylor, Los Angeles Co. | 33- 2-12 | 4,411 | sd. sh. drilling |
| Empire Drlg. Co., No. 1 Bell, Los Angeles Co. | 14- 2-12 | 4,402 | gr. sd. drilling |
| Continental Oil Co., No. 1 La Merada, Los Angeles Co. | 10- 3-11 | 3,420 | hd. sd. drilling |
| Shell, No. 2 Mission, San Fernando | 4- 2-15 | 4,812 | sd. sh. drilling |
| Andrews, Otis, No. 1 Lancaster, Los Angeles Co. | 23- 8-13 | 2,080 | suspended |
| Security Pet. Co., No. 1 Lynwood, Los Angeles Co. | 13- 3-13 | 5,333 | suspended |
| Harding, J. B., No. 1 Watts, Los Angeles Co. | 17- 3-13 | Mtl. | building rig |
| Richfield, No. 1 Maywood, Los Angeles Co. | 12- 2-13 | 579 | recemented |
| Easton & Smith, No. 1 Calabassas, Los Angeles Co. | 19- 1-17 | 2,982 | suspended |
| Russell Oil Co., No. 2 Joughin, Los Angeles Co. | 25- 3-17 | 1,008 | suspended |
| Mallory, Ellis, No. 1 Manhattan, Los Angeles Co. | 30- 3-14 | 125 | suspended |
| Pomona Oil Co., Well No. 1, Los Angeles Co. | 32- 1- 8 | 1,075 | clean. out |
| Anchor Oil Co., No. 1 Puente, Los Angeles Co. | 19- 2-10 | 4,748 | plug. back |
| Richfield Oil Co., No. 1 Puente, Los Angeles Co. | 9- 2-10 | 2,071 | sd. sh. drilling |
| Calif. Eastern, No. 1 Wickham, Los Angeles Co. | 32- 4-17 | 515 | sd. drilling |
| The Texas Company, No. 1 Anaheim, Orange Co. | 35- 4-10 | ... | location |
| Bastanchury Ranch Co., Well No. 1, Orange Co. | 21- 3-10 | Rig | rigging up |
| Mesa Pet., No. 1 Newport, Orange Co. | 21- 6-10 | 3,255 | recemented |
| West. Drlg. & Prod. Co., No. 1 Newport, Orange Co. | 18- 6-10 | 150 | sd. drilling |
| Hall Pet. Co., No. 1 Murrietta, Riverside Co. | 23- 7- 3 | 931 | rig, cable tools |
| Hemet Pet. Co., No. 1 Ward, Riverside Co. | 9- 5- 1 | 2,878 | suspended |
| Davenport Oil & Gas Co., No. 1 San Marcos, San Diego Co. | 30-12- 2 | 850 | hd. sd. drilling |
| Turner, S. S., No. 1 Escondido, San Diego Co. | 25-12- 2 | 1,650 | hd. sd. drilling |
| Torrey Pines Oil Co., Well No. 1, San Diego Co. | 18-14- 3 | 1,974 | gr. sd. drilling |

### IMPORTANT NORTHERN CALIFORNIA WILDCATS

| | | | |
|---|---|---|---|
| Milham Expltn., No. 1 Kettleman, Kings Co. | 2-22-17 | 7,235 | big gasser |
| Bolsa Chica, No. 1 Kettleman, Kings Co. | 20-25-19 | 3,502 | resume work |
| California Oil Co., No. 1 Kettleman, Kings Co. | 12-23-19 | Rig | suspended |
| General Pet. Co., No. 2 Ochsner, Kettleman Hills | 26-22-18 | 6,755 | clean. out |
| South Coalings, Well No. 1, Kettleman Hills | 30-22-19 | 3,110 | clean. out |
| Monocline Dev. Co., Well No. 1, Kettleman Hills | 7-21-21 | 4,308 | suspended |
| McPhail, Hugh, Well No. 1, Kettleman Hills | 13-24-18 | 2,100 | suspended |
| California Western Oil Co., No. 1 Elkins, Ventura Co. | 28- 4-19 | 2,951 | testing |
| Exline, Emma, No. 1 Saticoy, Ventura Co. | 33- 3-21 | 2,412 | fishing |
| Ohio Oil Co., No. 1 Saticoy, Ventura Co. | 32- 3-21 | Mtl. | building rig |
| Standard, No. 5 Saticoy, Ventura Co. | 1- 2-22 | 2,901 | hd. sd. drilling |
| Petroleum Sec., No. 1 Diblo, Ventura Co. | 26- 3-18 | 6,320 | hd. sd. drilling |
| American Oil Co., No. 1 Camarillo, Ventura Co. | 33- 2-20 | 550 | suspended |
| Star Pet. Co., No. 2 Canet, Ventura Co. | 13- 3-23 | 6,775 | suspended |
| Shell, No. 1 Grubb, Ventura Co. | 26- 2-22 | 5,350 | hd. sd. drilling |
| Bolsa Chica, No. 1 Temescal, Ventura Co. | 3- 4-18 | Mtl. | building rig |
| Miley, E. J., No. 2 Casitas, Ventura Co. | 12- 3-21 | 775 | clean. out |
| Shell, No. 2 Berlywood, Moorpark | 33- 3-20 | 7,240 | suspended |
| Continental, No. 1 Sulphur Mountain, Ventura Co. | 21- 4-22 | 2,250 | redrilling |
| Continental, No. 2 Sulphur Mountain, Ventura Co. | 22- 4-22 | 2,425 | cemented |
| Milham Expltn., No. 1-A Buttonwillow, Kern Co. | 8-28-23 | 4,662 | gas well |
| Milham Expltn., No. 2 Buttonwillow, Kern Co. | 8-28-23 | 2,730 | gas well |
| Milham Expltn., No. 3 Buttonwillow, Kern Co. | 8-28-23 | 2,694 | gas well |
| Milham Expltn., No. 4 Buttonwillow, Kern Co. | 6-28-23 | 2,670 | gas well |
| Milham Expltn., No. 5 Buttonwillow, Kern Co. | 5-28-23 | 2,500 | gas well |
| Milham Expltn., No. 6 Buttonwillow, Kern Co. | 8-28-23 | 2,676 | gas well |
| Milham Expltn., No. 7 Buttonwillow, Kern Co. | 15-28-23 | 2,726 | suspended |
| Milham Expltn., No. 8 Buttonwillow, Kern Co. | 16-28-23 | 3,053 | suspended |
| Doheny-Stone, No. 1 Salisbury, Kern Co. | 7-29-24 | 4,291 | suspended |
| South Calif. Gas Co., No. 1 Buttonwillow, Kern Co. | 4-28-23 | 4,272 | suspended |
| South Calif. Gas Co., No. 2 Buttonwillow, Kern Co. | 27-28-23 | Rig | suspended |
| Richfield Oil Co., No. 1 Semitropic, Kern Co. | 21-26-22 | 3,850 | to test |
| Pacific Eastern, No. 1 Union Ave., Kern Co. | 6-30-28 | 5,640 | suspended |
| Pacific Eastern, No. 2 Union Ave., Kern Co. | 6-30-28 | 4,550 | suspended |
| Pacific Eastern, No. 3 Union Ave., Kern Co. 4 | 6-30-28 | 4,443 | gas, shut in |
| Pacific Eastern, No. 4 Union Ave., Kern Co. | 6-30-28 | 5,201 | sd. sh. drilling |
| Pacific Eastern, No. 5 Union Ave., Kern Co. | 5-30-28 | 4,991 | suspended |
| Stabler, W. W., No. 1 Comanche Point, Kern Co. | 23-32-29 | 2,860 | fishing |
| General Pet., No. 3 Edison, Kern Co. | 5-30-29 | ... | location |
| Midway Northern, No. 1 Edison, Kern Co. | 29-29-30 | 3,702 | suspended |
| Delzel, S. A., No. 1 Delano, Kern Co. | 25-26-27 | 3,116 | suspended |
| Pacific Coast Oil Co., No. 1 Rio Bravo, Kern Co. | 15-29-25 | 42 | cemented |
| North American Roy., No. 1 Shafter, Kern Co. | 8-28-25 | 2,560 | suspended |
| Standard, No. 1 San Emidio, Kern Co. | 35-11-22 | 1,585 | hd. sh. drilling |
| Union, No. 1 San Emidio, Kern Co. | 5-10-21 | Mtl. | building rig |
| Fresno Madera Oil Co., No. 1 Clovis, Fresno | 18-12-21 | 4,194 | suspended |
| Friend, C. C., Well No. 1, Tulare Co. | 12-23-19 | 711 | abandoned |
| Union, No. 1 Huasna, San Luis Obispo | 34-32-15 | 3,073 | redrilling |
| Union, No. 1 North Huasna, San Luis Obispo Co. | 12-32-14 | 1,980 | br. sh. drilling |
| Panorama Oil Co., Well No. 1, San Luis Obispo Co. | 7-31-21 | 3,060 | br. sh. drilling |
| Sequoia Oil Co., Well No. 2, San Mateo Co. | 15- 7- 5 | 1,605 | suspended |
| Sunset Pacific, No. 1 Saratoga, San Mateo Co. | 13- 7- 4 | Rig | suspended |
| Shell, No. 2 Cowell, San Mateo Co. | 8- 6- 5 | 3,694 | testing |
| Shell, No. 1 Butts, San Mateo Co. | 16- 6- 5 | 3,240 | hd. sd. drilling |
| Shell, No. 3 Petaluma, Sonoma Co. | 8- 6- 5 | 210 | sd. drilling |
| Calhoma Oil Co., No. 1 Livermore, Alameda Co. | 9- 3- 3 | 1,350 | suspended |
| Foster & Hammill, Well No. 1, Alameda Co. | 21- 3- 3 | Rig | suspended |
| R. Y. Hanlyn, Well No. 1, Alameda Co. | 3- 5- 2 | 316 | hd. sd. drilling |
| Tepesquit Oil Co., Well No. 1, Santa Barbara Co. | 3- 9-32 | 2,710 | suspended |
| Becker, Geo. F., No. 1 Summerland, Santa Barbara Co. | 33- 4-25 | 3,090 | suspended |
| Continental, No. 1 Carpenteria, Santa Barbara Co. | 33- 4-25 | 414 | sd. drilling |
| Colus Oil Co., Well No. 1 Colusa Co. | 31-15- 4 | 380 | redrilling |
| Nuna Oil Co., Well No. 1 Colusa Co. | 19-15- 5 | 400 | hd. sd. drilling |
| Superior Oil Co., No. 1 Calivada, Colusa Co. | 31-15- 4 | 1,011 | suspended |
| Marland Oil Co., No. 1 Bradley, Monterey Co. | 32-24-11 | 4,861 | bad pipe |
| Brown Oil Co., No. 1 Parkfield, Monterey Co. | ... | ... | grading |
| North Counties Oil Co., Well No. 2, Humboldt Co. | 36- 2- 1 | 2,205 | suspended |
| Humboldt Oil Co., Well No. 1 Humboldt Co. | 6- 2- 1 | 3,041 | redrilling |
| Kuhns, H. L., Well No. 1, Merced Co. | 9-12- 9 | 1,500 | hd. sd. drilling |
| Tuck, J. W., Well No. 1, Santa Clara Co. | 9- 8- 1 | 3,000 | suspended |
| L. A. Madera Synd., Well No. 2, Madera Co. | 21-10-17 | 2,690 | hd. sd. drilling |

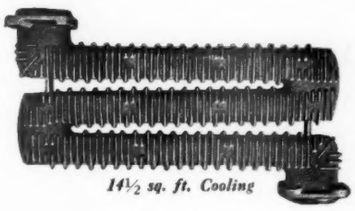
# STERLING
## OIL SECTIONS



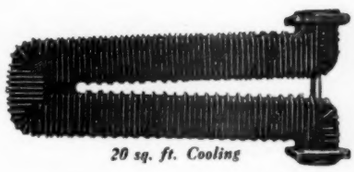
*14 sq. ft. Condensing*

STERLING
OIL CONDENSING
AND
COOLING SECTIONS

are successfully performing a surprising variety of duties in the oil industry.



*14½ sq. ft. Cooling*



*20 sq. ft. Cooling*

## Have you thought of all the following uses?

**IN REFINERIES:**

Low pressure vapor condensing; low pressure cracking plants; knock back coils; heat exchangers; tank heaters; rundown coils.

**IN GASOLINE PLANTS:**

Oil coolers; pre coolers; after coolers; vapor condensers; jacket water coolers.

*We will gladly furnish any detailed information you desire.*

# AMERICAN RADIATOR COMPANY

Industrial Division No. O-1311

40 West 40th Street NEW YORK | 816 South Michigan Avenue CHICAGO | Factory: Springfield, Ill. | 935 Kennedy Building TULSA | 1214 Quinby Building LOS ANGELES

Sixty-three wells recently passed the 3,000-foot level and the bits in 28 additional holes are racing to this point.

A list of wells below the 5,000-foot level contains the Associated Oil Co.'s Nos. 2 and 3 on the Jordan lease, at 5,575 and 5,335 feet, respectively; Bellview Oil Co.'s No. 2 Grohs at 5,980 feet; George F. Getty's No. 8 Parcell at 5,460 feet, McKeon Drilling Co.'s No. 1 at 5,707 feet, Star Petroleum Co.'s No. 2 at 5,348 feet, Superior Oil Co.'s Nos. 4 and 5 on the Wardman propery at 6,061 feet and 5,899 feet, respectively; The Texas Company's No. 11 on Mattern Lease No. 3 at 5,108 feet, Union Oil Co.'s No. 30 Bell, which has just been cemented at 5,660 feet; Universal Consolidated Oil Co.'s Nos. 6 and 7 on the Blanchard property and its No. 20 Connell, and the Wilshire Oil Co.'s No. 1-B Cecelia at 5,550 feet. The Texas Company successfully finished its No. 7 on Mattern Lease No. 2 a few days ago and this new Buckbee zone producer registered an initial daily production of 3,240 bbls. from 5,819 feet, the oil being clean and testing 38.6 degrees. It is flowing through a 1-inch bean under a pressure of 760 pounds and is producing from 148 feet of formation.

### Long Beach

Although the Long Beach Field had been expected to hit the toboggan around the first of October, deep-zone development has continued unabated and, with 192 incompleted drilling wells under way, this field will undoubtedly continue to be an important factor in state production for several months. Development work has been consistently extended westward and if the entire Los Cerritos area is proven as prolific as the old field at least 100 new wells will be drilled during the next six months. The potentialities of the Los Cerritos area have not yet been definitely determined, although present indications look exceptionally favorable, and a projected substantial development program is held in abeyance. The Umpire Petroleum Co. focused the attention of operators on this area several weeks ago and A. J. Delaney's No. 1 Bauter, which came in last week flowing 3,750 bbls. per day from 5,855 feet, supplements the original discovery and confirms the opinion of many that substantial production may be anticipated as the latter project is the most southerly producer on the east side of American Avenue.

The Umpire's deep-zone discovery in the northwest, or Los Cerritos extension, showed an initial daily production of 750 bbls. and while it failed to hold up, the showing of this well was particularly gratifying as it was producing under a serious handicap. A too judicious use of heavy mud and the imperfect mechanical condition of the hole which required the utilization of a small 4¾-inch oil string, prevented consistent substantial production with the result that the company re-entered the hole a few weeks ago and has just recompleted it at 6,847 feet. It was returned to production under a natural flow a few days ago doing 325 bbls. daily, the oil testing 29.2 degrees and showing a cut of 4 per cent. The relatively small production secured upon recompletion is due partly to the hole being finished with a 3-inch liner, although the casing pressure, 350 pounds, is considered favorable under the circumstances.

### Shell Completes Three

The Shell Oil Co. carried off completion honors during the week by completing three new wells and increasing its daily production 4,870 bbls. The company started off by bringing in No. 33 Alamitos doing 1,360 bbls. of clean 30.2 gravity oil and 1,500,000 feet of wet gas daily. This new well was carried to 7,644 feet and finished with a 5¾-inch oil string carrying 2,067 feet of perforated and cemented through perforations at 5,560 feet. No. 12 Cresson followed No. 33 Alamitos into production a day or two later and while it tanked 1,870 bbls. of 30.2 gravity oil during the initial 24 hours it has built up to better than 2,000 bbls. daily. This well was carried down to 7,370 feet and finished with a 5¾-inch oil string carrying 2,281 feet of perforated landed at 7,352 feet and cemented through perforations at 5,070 feet. No. 5 Babb & Tucker, the last new well chalked up by the Shell, came in under a natural flow doing 1,640 bbls. of 29.9 gravity oil and 1,700,000 feet of saturated gas daily, the hole having been carried down to 6,338 feet and finished with a 5¾-inch oil string, including 960 feet of perforated. The Shell's No. 3 Wells is the deepest drilling project in the Long Beach Field and the outcome will be watched with interest as it is one of the few holes carried down below the 8,000-foot level. It was finished at 8,087 feet and the oil string is being run in preparatory to an early test.

The Richfield Oil Co., which is running 26 strings of tools in the Long Beach Field, completed No. 1 Drake but it did not get under way for several days. It turned out to be a satisfactory completion as this new well is flowing 1,150 bbls. of 29.1 gravity oil daily from 6,255 feet at the present time. The Richfield has several other projects nearing completion and its current production in this field of 35,000 bbls. per day should be augmented in the near future. The Shell, discoverer of the Long Beach Field, is running 42,000 bbls. of pipe line oil out of this field daily. The Texas Company has also developed a very satisfactory production in this field, current output approximating 21,000 bbls. daily. The General Petroleum is moving 10,000 bbls. per day of its own production and this figure should be augmented by the completion of several deep-zone wells nearing completion. The company completed one new well on the K. & H. lease. This was No. 10, which came in flowing 640 bbls. daily from 6,949 feet, the hole having been finished with a 5¾-inch oil string carrying 1,526 feet of perforated. Tom Bailes has just brought in his No. 1 Long Beach flowing 1,670 bbls. of clean 29.4 gravity oil daily from the upper part of the deep sand at 5,585 feet.

### Seal Beach

The Marland Oil Co. recompleted two wells in the Seal Beach Field, both being located on the Selover lease. No. 4, which was originally finished as a 1,090-bbl. well in the Bixby zone from 4,769 feet in March of last year, was returned to production after being redrilled and deepened to the Selover zone at 5,440 feet. It showed an initial production of 1,740 bbls. of clean 27.5 gravity oil upon recompletion. No. 10 Selover was returned to production flowing 1,480 bbls. of 27.9 gravity oil daily after being redrilled and deepened from 6,620 feet to 6,657 feet. This well was originally finished in May, 1927, and recompleted in July and again in September of the same year after being redrilled and deepened. No. 14 Selover, which was finished in the deep Bonner zone a few weeks ago at 6,900 feet, is holding up exceptionally steady, the current production approximating 2,270 bbls. daily.

The Cypress Petroleum Co. chalked up a satisfactory completion in the Rosecrans Field when its No. 1 Rosecrans was returned to production flowing 460 bbls. of relatively clean 39.1 gravity oil and 1,300,000 feet of unusually wet gas daily after being redrilled and deepened to 6,068 feet. Very little development work is being done in this area and consequently completions are few. The Montebello Field presents a similar situation and will undoubtedly continue inactive for a long time, although the St. Helens Petroleum is making preparations to spud in No. 17 Monterey, a new well required in compliance with lease requirements which obligate the company to offset the Standard's operations on the adjoining Stocker Merced property. The Petroleum Securities completed rig construction for No. 6 Cone, a new well in the Inglewood Field of Los Angeles Basin, and this project, which is scheduled for completion in the deep zone, will probably be making hole within 10 days, although it is rumored work will be held up during the leave of absence taken by J. C. Anderson, vice president. The Standard is also starting a new well in this field, No. 58 Los Angeles Investment Lease No. 1, and while it is scheduled for completion in the upper horizon, it will no doubt be deepened to the lower zone if the Petroleum Securities follows out its intention of engaging in deep-zone exploitation. A check of development work under way in the Richfield district indicates the probable completion of several new wells within 15 days and this group should be followed by several more before November ends. No. 1 Pyne of the Biltmore Oil Co., George W. Johnson's No. 1 Davenport and No. 1 Vejar of the Standard should be the next wells finished.

### Ventura Avenue

The scope of work in the Ventura Avenue Field has been consistently increasing with the result that 42 strings of tools are in operation. Many wells are below the 6,000-foot level and several should consequently be on production shortly. The Bolsa Chica Oil Co. is making preparations to recomplete No. 3 Hartman and this 6,573-foot hole should be finished within two weeks as it has been redrilled to 6,370 feet preparatory to running in the oil string. The Petroleum Securities, running eight strings of tools, should have No. 5 Orton and Nos. 1 and 4 on the Willett lease tanking oil within 30 days. The Shell has three wells that should be finished around the middle of next month. Four others on the Edison, Gosnell and Taylor leases should be finished early in December. The Associated has four wells below the 7,000-foot level in this field and one, No. 8 Ventura Land & Water, is being prepared for immediate completion. This well has been carried down to 7,500 feet and finished with a 5¾-inch oil string. The projected production test on No. 8 Ventura Land & Water is of special significance because it will determine the productivity of the lower part of the deep zone. It has been customary to take advantage of every available foot of oil sand encountered and for this reason the test on No. 8 will be watched with considerable interest as the upper part of the lower zone will be cased off. The 9-inch in this project was landed at 5,875 feet instead of around 5,400 feet as customary.

### Midway-Sunset

The Republic Petroleum Co. successfully finished its No. 31 in Section 7-

(Continued on Page 105)

**TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS**

| Commodity— | Total this week | Daily average | Total last week | Daily average | This year to date | Same time last year |
|---|---|---|---|---|---|---|
| Crude oil | ..... | ..... | 93,885 | 13,412 | 2,839,582 | 8,561,735 |
| Fuel oil | ..... | ..... | ..... | ..... | 111,621 | 6,716,619 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 1,543,114 | 2,303,789 |
| Gasoline | 469,221 | 67,032 | ..... | ..... | 11,263,385 | 7,630,649 |
| Tops | ..... | ..... | ..... | ..... | 259,600 | ..... |
| Coastwise— | | | | | | |
| Crude oil | 300,440 | 42,920 | 498,789 | 71,256 | 20,010,070 | 20,654,882 |
| Fuel oil | 368,376 | 52,625 | 361,413 | 51,630 | 13,347,241 | 10,744,847 |
| Diesel and gas oil | 47,679 | 6,811 | 8,900 | 1,271 | 939,787 | 341,048 |
| Gasoline | 272,640 | 38,947 | 372,696 | 53,242 | 7,462,765 | 8,179,492 |
| Kerosene | 1,592 | 227 | ..... | ..... | 65,653 | 204,310 |
| Tops | ..... | ..... | ..... | ..... | 171,566 | 152,275 |
| Exports— | | | | | | |
| Crude oil | 67,550 | 9,650 | 71,150 | 10,164 | 1,785,457 | 2,062,877 |
| Fuel oil | 421,574 | 60,225 | 640,340 | 91,477 | 18,562,669 | 23,850,226 |
| Diesel and gas oil | 3,536 | 505 | ..... | ..... | 1,927,852 | 1,238,039 |
| Gasoline | 386,188 | 55,170 | ..... | ..... | 5,867,212 | 4,348,043 |
| Tops | ..... | ..... | ..... | ..... | ..... | 227,204 |
| Kerosene | ..... | ..... | 70,025 | 10,004 | 3,486,074 | 1,825,793 |

**TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC, GULF COAST PORTS**

| | | | | | | |
|---|---|---|---|---|---|---|
| Diesel and gas oil | ..... | ..... | ..... | ..... | 342,425 | 671,340 |
| Gasoline | ..... | ..... | ..... | ..... | 1,672,095 | 1,760,014 |
| Lubricants | ..... | ..... | ..... | ..... | 277,151 | 370,180 |
| Coastwise— | | | | | | |
| Fuel oil | 4,022 | 575 | 93,119 | 13,303 | 2,981,771 | 4,380,219 |
| Diesel and gas oil | 3,983 | 569 | 5,980 | 854 | 263,235 | 208,489 |
| Gasoline | 115,183 | 16,455 | 69,401 | 9,914 | 3,726,307 | 4,421,458 |
| Kerosene | 4,780 | 683 | 2,502 | 357 | 185,958 | 198,243 |
| Exports— | | | | | | |
| Crude oil | ..... | ..... | ..... | ..... | 96,250 | ..... |
| Fuel oil | ..... | ..... | 58,629 | 8,376 | 1,989,572 | 2,250,702 |
| Diesel and gas oil | ..... | ..... | ..... | ..... | 10,400 | ..... |
| Gasoline | 86,452 | 12,350 | 65,752 | 9,107 | 3,753,716 | 2,384,207 |
| Kerosene | 6,680 | 954 | ..... | ..... | 470,760 | 819,774 |
| Lubricants | ..... | ..... | ..... | ..... | 33,535 | 26,695 |

# MUSKEGON DRILLING RULE FAILS TO HALT DISPUTED OPERATION

By Special Correspondent

MUSKEGON, Mich., Oct. 27.—Kelley Goldboss, of Chicago, will have completed his No. 3 Burns well, SE SE Section 5-10-16, before his contest with the State of Michigan over the right to drill on less than five acres has been settled, according to present indications.

An order continuing the temporary injunction which prevents George A. Hogarth, head of the state conservation department, and others from interfering with his drilling operations was signed by Federal Judge Fred M. Raymond, of the Western Michigan District Court at Grand Rapids. By this new order, drilling operations will be allowed to continue indefinitely, or at least until Judge Raymond issues a further order. In the meantime the well which started the controversy has been drilled to more than 2,000 feet and will be cased above the Dundee formation. It is expected it will be completed early next week as a large gasser, as it is surrounded by gassers ranging in open flow capacity from 5,000,000 to 15,000,000 feet a day.

### Nine Completions

Completion of nine wells, five as oil producers and four as dry gas wells, set a record this week for the Muskegon oil and gas field.

The largest producer was the Meeske Development Syndicate's No. 1 Drost, SE SE, Section 5-10-16, which came in in the Dundee formation with an initial flow estimated at 8,000,000 feet of gas and about 500 bbls. of oil. At 2,062 feet the well was gauged and found to be making gas at the rate of 4,500,000 feet a day. With another foot of drilling the gas doubled and oil sprayed high over the top of the derrick. Tanks, a gas trap and other equipment necessary to flow the well are now being installed.

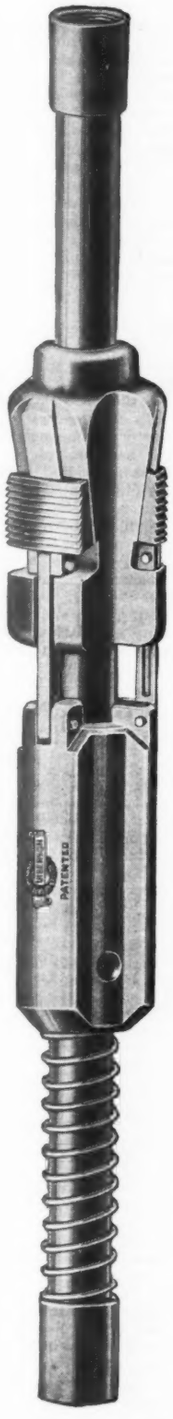
Another surprise was received when the Cedar Creek Oil & Gas Co.'s No. 1 Fagan, SW NW, Section 10-10-16, came in as a 100-bbl. producer in the upper Traverse formation. The red rock, first indicator in the local field, was 48 feet low on this well but the top of the Traverse had righted itself at 1,612 feet and the first pay was encountered from 1,630-34 feet. Several more pay streaks were hit before 1,650 feet and the well is now drilling to the lower Traverse at about 1,850-1,900 feet in an effort to increase its flow and produce from the two pays in the upper formation.

Although the other three oil wells came in as comparatively small producers in the upper and lower Traverse pays, two of them may be increased by a shot. The Citizens-Lake Shore Petroleum companies' No. 1 Meurer, NE SE, Section 8-10-16, will make about a 40-bbl. pumper in the upper Traverse when cleaned out. It was shot at 1,650 feet.

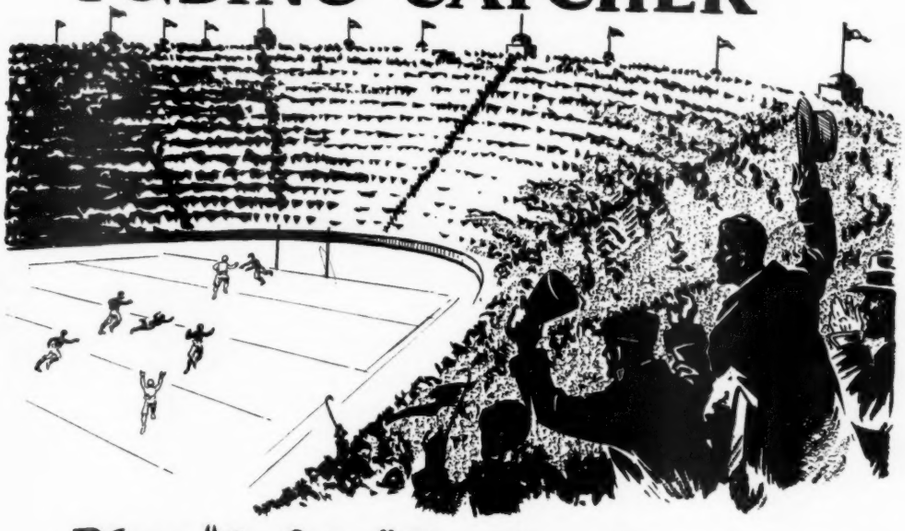
The Muskegon Oil Corp.'s No. 1 Nichols, NE NW, Section 8-10-16, came in for 60 bbls. from the upper and lower Traverse formations. It was drilled to 1,915 feet where additional gas and oil made it worth completion in the upper formation. It will be shot.

The same corporation's No. 2 Figge is making 40 bbls. from the upper Traverse formation at 1,650 feet. It is in NW NW, Section 9-10-16, within a

(Continued on Page 105)




# *Let the* GUIBERSON TUBING CATCHER



## *Play "Safety" Position in your well*

In football, when a runner breaks loose from the field and makes for the goal, everything depends on the "safety." The "safety" must stop him, or over he goes for a touchdown.

In an oil well, when the tubing breaks loose and starts for the bottom, tons of metal ready to twist itself into useless junk, everything depends on the Tubing Catcher. The Tubing Catcher must stop it—and the GUIBERSON does, within three inches, neatly and positively. The strong spring operates with or without fluid in the hole; the heavy striker weight overcomes the retarding action of mud or paraffin. Dovetail tracks guide the slips instantly and accurately to where they bite into the casing wall. Your well without a Tubing Catcher is like a football team without a "safety."

*"Better Be Safe Than Sorry"*

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GUIBERSON
BETTER BE SAFE THAN SORRY

# GULF COAST SHIPMENTS INCREASED 256,368 BARRELS IN SEPTEMBER

By Neil Williams

HOUSTON, Tex., Oct. 27.—Water shipments of crude and refined products from Gulf Coast ports during September totaled 17,553,832.29 bbls., according to figures just compiled. This was an increase of 256,368.98 bbls. over the previous month.

Of the total shipments during September, 10,872,390.98 bbls. represented refinery products and 6,681,441.31 bbls. crude. The "liftings" were marked by a decrease in the amount of crude moved, particularly for export, but this drop was more than offset by the increase in refinery products.

Water shipments for September as compared with August were:

(All figures in barrels of 42 gallons)

| Company, port— | Coastwise refined— August | Coastwise refined— September | Export refined— August | Export refined— September |
|---|---|---|---|---|
| Standard of Louisiana, Baton Rouge | 739,300.00 | 620,091.00 | 1,099,330.00 | 383,975.00 |
| The Texas Company, Port Arthur | 1,466,804.00 | 1,610,945.00 | 303,211.00 | 341,393.00 |
| Gulf Refining Co., Port Arthur | 2,292,546.25 | 2,590,390.85 | 120,140.83 | 80,165.87 |
| Magnolia Petroleum Co., Beaumont | 786,971.80 | 1,414,952.78 | * | * |
| Humble Oil & Refining Co., Baytown | 1,070,604.76 | 1,256,562.60 | 1,315,803.15 | 1,916,748.23 |
| Atlantic Oil Prod. Co., Atreco | 181,147.97 | 69,715.66 | ..... | ..... |
| Pure Oil Co., Smiths Bluff | 585,738.97 | 453,531.47 | 3,971.76 | 133,919.52 |
| Total | 7,122,113.75 | 8,016,189.36 | 2,842,456.74 | 2,856,201.62 |

| | Coastwise crude— August | Coastwise crude— September | Export crude— August | Export crude— September |
|---|---|---|---|---|
| Standard of Louisiana, Baton Rouge | 846,924.00 | 423,864.00 | 52,915.00 | 53,463.00 |
| The Texas Company, Port Arthur | 71,842.00 | 51,744.00 | ..... | ..... |
| Gulf Refining Co., Port Arthur | 235,466.64 | 109,339.16 | ..... | ..... |
| Magnolia Petroleum Co., Beaumont | 765,563.72 | 470,080.16 | * | * |
| Humble Oil & Refining Co.: | | | | |
| Texas City | 743,183.00 | 980,890.00 | 40,549.00 | ..... |
| Ingleside | 1,556,805.00 | 65,555.00 | 139,323.00 | ..... |
| Baytown | 465,485.00 | 413,386.00 | ..... | ..... |
| Neches | ..... | 73,484.00 | ..... | ..... |
| Harbor Island | ..... | 1,942,995.00 | ..... | ..... |
| Atlantic Oil Prod. Co.: | | | | |
| Atreco | 637,512.86 | 780,838.64 | ..... | ..... |
| Beaumont | 326,852.56 | 372,216.30 | ..... | ..... |
| Smiths Bluff | 34,541.19 | ..... | ..... | ..... |
| Pure Oil Co., Smiths Bluff | 566,568.84 | 505,353.05 | ..... | ..... |
| Sun Oil Co., Sabine Pass | 849,361.00 | 438,233.00 | ..... | ..... |
| Total | 7,100,105.81 | 6,627,978.31 | 232,787.00 | 53,463.00 |

*Magnolia Petroleum Co. makes no distinction in reports between coastwise and export shipments.

## DOMESTIC EXPORTS OF PETROLEUM AND REFINED PRODUCTS

| | Month of Sept. 1927 | Month of Sept. 1928 | Nine Months Ended Sept. 1927 | Nine Months Ended Sept. 1928 |
|---|---|---|---|---|
| Petroleum: | | | | |
| Crude ..... Bbls. | 1,296,970 | 1,501,922 | 11,306,722 | 13,725,903 |
| Crude ..... $ | 1,923,721 | 2,128,107 | 18,751,009 | 19,178,747 |
| Total refined: | | | | |
| Petroleum ..... Bbls. | 8,979,751 | 10,550,869 | 86,227,359 | 96,963,544 |
| Petroleum ..... $ | 31,797,742 | 43,205,780 | 329,784,463 | 351,014,990 |
| Gasoline, naphtha and other light products ..... Bbls. | 3,487,007 | 4,690,741 | 32,815,897 | 39,546,346 |
| ..... $ | 14,519,180 | 23,895,361 | 164,604,669 | 172,971,853 |
| Oils: | | | | |
| Illuminating ..... Bbls. | 1,651,547 | 2,068,024 | 14,100,197 | 16,787,222 |
| Illuminating ..... $ | 6,267,647 | 8,907,430 | 59,300,958 | 70,792,370 |
| Gas and fuel ..... Bbls. | 2,981,012 | 2,988,296 | 31,971,831 | 32,151,715 |
| Gas and fuel ..... $ | 3,239,365 | 3,122,392 | 37,635,775 | 35,630,925 |
| Lubricating ..... Bbls. | 850,598 | 784,100 | 7,225,048 | 8,348,206 |
| Lubricating ..... $ | 7,633,089 | 7,083,382 | 66,796,701 | 70,056,574 |
| Other refined petroleum ..... Bbls. | 9,587 | 19,708 | 114,386 | 130,055 |
| Other refined petroleum ..... $ | 138,461 | 197,215 | 1,446,360 | 1,563,268 |
| Paraffin wax ..... Lbs. | 32,350,167 | 27,131,477 | 248,845,899 | 314,608,397 |
| Paraffin wax ..... $ | 1,249,535 | 1,317,835 | 11,376,733 | 12,887,167 |

## FARISH DISCUSSES PETROLEUM SITUATION

(Continued from Page 32)

cured extensions instead of drilling to validate. Key wells, to which offset lessees have made substantial dry hole contributions, have been drilled at designated points to outline a pool, the key wells being pinched in. Where there seemed to be no equitable plan for retarding development the pool has been drilled and the production prorated. These plans have resulted in leaving the oil in the ground until needed, rather than storing aboveground and suffering heavy expense of so doing.

**More Efficiency, Lower Cost**

"By producing in this orderly manner we do so at a saving of 20 to 25 per cent of the costs entailed when work proceeds without restraint in a rich area such as Seminole. Labor is more efficient; trained men are available for all jobs requiring skill. We are not required to use tools unsuited to our needs. Adequate transportation is available. All work proceeds at an efficient speed. Orderly drilling for oil results in the saving of incalculable values in gas and its by-product gasoline.

"Suppose in a pool all wells were completed at once. No one could afford to install gasoline plants to meet the peak load, while if the wells are completed at a reasonable rate the gas can be utilized. Further, the gas serves us much more efficiently in carrying the oil from points distant from the well to the bore hole.

"Where development does not proceed in an orderly manner not only are costs inordinately high, but often irreparable damages result. Wells are drilled into water, cementing of casing fails. Holes are crooked and the fire hazard is materially increased.

"Since any plan devised to help is apt to temporarily hurt some individual, it is well nigh impossible to secure to the plan unanimous approval. Therefore, I personally consider it necessary for the ultimate success of conservation that we should have the assistance of State and Federal authorities either to grant us powers or to remove some of the existing restrictions. It would seem well for the industry to offer these plans lest statutes be enacted that might prove most burdensome to our business.

"We have been told that the conservation movement is an effort to increase the price of our products, though parading in another guise. It is my belief that as a whole the ultimate consumer will pay less rather than more for our products if we conduct our business in the orderly manner possible under a conservation plant. It is my firm conviction that the consumer worries more over a fluctuating price than a constant price that is equitable."

**Mr. Farish's Address**

W. S. Farish, of Houston, Tex., president of the Humble Oil & Refining Co., said he could not view the petroleum situation as cheerfully as some were doing. While improvement must be noted, the manner of conducting the oil business was still disorganized, unsatisfactory and inefficient, with no co-ordination between the producer of crude oil and the retail seller of petroleum products. We have an overproduction abroad and an overproduction at home under restraint, he said. The restraint has been in effect over a year yet we are overproducing, and selling the product at low prices. It is essential, Mr. Farish said, that all prices—crude, tank car, tank wagon and retail—should bear a more or less fixed relationship to each other.

Mr. Farish put it up to the producer of crude to bring about an improvement in general oil conditions. "To produce crude as fast as we can, once it is found, is to lose control of the value of our properties," he said. Overproduction means wasteful operations, high costs, an unnecessary number of wells, the storage of unnecessary crude aboveground at high costs, waste and loss of money, Mr. Farish continued. Overproduction forces the refiner to run more crude to make more gasoline and fuel oil. It forces the sale of oil for fuel. The oil business is one wherein its products should not be in competition with anything else, said the speaker. There is no substitute for gasoline or lubricating oil. Fuel is the one thing sold in competition with something else, and the industry has pushed that competition so far that fuel oil brings less than 50 per cent of its economic value as compared with coal.

"The refiner has grasped the situation much better than the producer," said Mr. Farish. "The refiner has organized his business on a profit basis and recently has been making money. The refiner has finally realized that it is a better policy to make what he can sell, rather than to try to sell all he can make. Because of the policy of the producer oil is being brought to the surface in such volume as to force the refiner to go farther and farther afield in order to sell all his products. The refining industry in the United States as a whole is now extracting about 41 per cent of gasoline from crude. The probable maximum under present refining practices would be 48 per cent. Forty-six per cent of the crude run to stills is fuel oil and the quantity of this product has become so great as to glut the market and lower the price to its present uneconomic stage."

Mr. Farish said the marketing business has done fairly well this year. This branch of the industry was making some effort to cut the high cost of distribution but that the costs were still too high. In his opinion the number of filling stations should be lessened.

"The progress made by the industry in recent times is only the beginning; just an awakening to the fact that sight is coming to the oil business, the speaker said. The industry has made no real progress down the road, but is just beginning to see where it is going, who is going with it and why it is going.

"To continue to operate as in the past," Mr. Farish said, "is to continue unsatisfactory conditions. To produce crude as fast as it is found is to lose control of the value of our properties.

**Restrain Flush Production**

"I put as the first step forward, that we must find new ways to restrain production in new fields as they are discovered, holding current production to current consumption. To accomplish this we must consolidate acreage into the largest possible blocks; second, we must consolidate the acreage on all known structures; third, we must stop the financing of wildcat wells on acreage not consolidated.

"When we have done all possible along this line we must then, with the help of our state commissions, find some way to effectively prorate production to be taken from these fields. If this proves impossible because some will not help—because some individuals insist that their own particular situation is more important than the prosperity of the industry and are not willing to play the game according to the new rules, the nthere must be some authority in the State Government to enforce conservation laws that will prevent waste of gas, waste of oil and unnecessary storage aboveground.

"If we producers with the means available do not place a limit on the amount of oil we are willing to produce at present or lower prices, whom do you think is geing to be the guardian angel that will do this for us. If we continue to produce and give to the refiner and the pipe line all the oil they want at present prices, there is no hope of ever getting prices on a more reasonable basis.

"The record is such that the ways of the past will not do. The flood of oil today, plus the overproduction in sight, demands a new look—a new starting point in the consideration of the whole question. Just because you Oklahoma producers think Oklahoma cannot overproduce you must not forget Texas, the Gulf Coast and California, and on that subject I might say that the idea that seems to prevail among Oklahoma producers that their State has seen its best days as an oil region is not my idea. I think Oklahoma will continue to uncover great fields of crude oil.

"You can have prosperity if you will, but nobody else can have it for you. If you conduct your business as in the past, then in my judgment you cannot have real prosperity until you have begun to exhaust the nation's resources of oil—until shortage of supply comes from lack of supply.

"Isn't it better for us to co-operate with each other and the State authorities and so manage our own business as to bring about a gradual approach to the time of this shortage, however far it may be in the future rather than to drift up to this shortage without an effort to anticipate and manage accordingly? I contend that the industry is far better off if each individual in it, large and small, contributes to the management of the industry, and its order and progress than it would be if we continue to produce as in the past.

"I do not like to contemplate the type of conservation laws, the restrictions and restraints that will be inflicted on this industry, if we drift along to the point where exhaustion or shortage of the necessary products from petroleum is in sight."

## C. & G. COOPER CO. BUYS HOPE ENGINEERING PLANT

The C. & G. Cooper Co. of Mt. Vernon, Ohio, has purchased the manufacturing end of the Hope Engineering Co., including the Hope manufacturing plant, plant site and engine designs. The Hope plant is being operated as a division of the Cooper organization. For a time, at least, the Hope organization, including branch offices, will continue to sell and service the well-known Hope engines and other Hope equipment just as they have done in the past. This, however, is purely a sales connection and represents the only connection between the two organizations, which will continue to maintain as always their separate and unallied identities.

The Hope factory, located in Mt. Vernon, Ohio, only a few blocks from the Cooper plant, will permit of a much needed further expansion in Cooper manufacturing facilities. In recent years the rapid growth of the Cooper business had made it necessary to go outside of Mt. Vernon for manufacturing capacity. The purchase of the Hope plant will allow more of this work to be done in Cooper plants under closer supervision.

The Hope line of vertical gas engines and compressors will also fill out the Cooper line which up to now has consisted of the slow-speed horizontal types, chiefly in the larger sizes.

The sale of the manufacturing end of the business will permit the Hope Engineering Co. to devote more of its efforts to the pipe line and construction end of their business, which in recent years has grown to constitute their major interest.

## INTERNAL COMBUSTION

Data regarding the care, operation and performance of the internal combustion engine together with short articles of interest to manufacturers and users of this type of power are contained in a booklet entitled "Internal Combustion Power," the official organ of the Society for the Development of Internal Combustion Power. The booklet is published at Titusville, Pa.

# CALIFORNIA OIL FIELD OPERATIONS, SEPTEMBER, 1928

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for September amounted to 18,908,169 bbls., an average of 630,272 bbls. per day. This is an increase of 3,017 bbls. per day over August production.

Total stocks of crude and all products in Pacific Coast territory decreased during the month 336,355 bbls. The total stocks at the end of the month were 138,107,642 bbls. The total stock decrease for 1928, up to September 30, was 2,210,975 bbls. Comparative figures as of September 30, 1928, August 31, 1928, and September 30, 1927, are shown here.

Fifty-nine wells were completed during the month with an initial daily production of 54,964 bbls., compared with 57 wells completed during August with an initial production of 30,058 bbls.

## PRODUCTION

(Figures of production and stocks are in barrels of 42 gallons.)

| District— | Barrels per Month | Daily average Sept., 1928 | Aug., 1928 | Sept., 1927 |
|---|---|---|---|---|
| Kern River | 174,991 | 5,833 | 6,061 | 17,992 |
| Mount Poso | 8,575 | 286 | 274 | 81 |
| Fruitvale | 10,446 | 348 | 294 | ..... |
| Round Mountain | 3,347 | 112 | 124 | ..... |
| McKittrick | 148,123 | 4,937 | 5,133 | 4,954 |
| Midway-Sunset | 2,185,728 | 72,858 | 73,782 | 84,700 |
| Elk Hills | 631,615 | 21,054 | 21,594 | 25,987 |
| Lost Hills-Belridge | 121,048 | 4,035 | 4,066 | 4,015 |
| Coalinga | 314,280 | 10,476 | 10,624 | 19,347 |
| Wheeler Ridge | 27,219 | 907 | 885 | 1,097 |
| Watsonville | 1,825 | 61 | 62 | 55 |
| Santa Maria | 149,461 | 4,983 | 4,955 | 5,687 |
| Summerland | 3,445 | 115 | 121 | 140 |
| Elwood-Goleta | 75,599 | 2,520 | 2,311 | 300 |
| Rincon | 123,446 | 4,115 | 3,570 | ..... |
| Ventura Avenue | 1,629,377 | 54,313 | 50,793 | 57,511 |
| Ventura-Newhall | 170,853 | 5,695 | 5,707 | 6,072 |
| Los Angeles-Salt Lake | 44,461 | 1,482 | 1,509 | 1,672 |
| Whittier | 49,072 | 1,636 | 1,597 | 1,739 |
| Fullerton (Brea Olinda) | 511,717 | 17,057 | 14,633 | 17,266 |
| Coyote | 389,295 | 12,976 | 13,505 | 14,059 |
| Santa Fe Springs | 1,120,785 | 37,360 | 39,570 | 39,940 |
| Montebello | 346,064 | 11,535 | 11,924 | 14,546 |
| Richfield | 511,091 | 17,036 | 17,885 | 22,106 |
| Huntington Beach | 1,567,200 | 52,240 | 51,762 | 64,667 |
| Long Beach | 5,939,972 | 197,999 | 190,910 | 90,166 |
| Torrance | 496,290 | 16,543 | 17,268 | 21,389 |
| Dominguez | 320,484 | 10,682 | 11,034 | 15,218 |
| Rosecrans | 183,359 | 6,112 | 5,831 | 7,953 |
| Inglewood | 851,012 | 28,367 | 30,012 | 32,984 |
| Newport | 480 | 16 | 86 | 22 |
| Seal Beach | 787,323 | 26,244 | 28,976 | 63,817 |
| Potrero | 10,185 | 339 | 391 | ..... |
| Total | 18,908,169 | 630,272 | 627,255 | 635,483 |
| August | 19,444,899 | 627,255 | | |
| Decrease | 536,730 | *3,017 | | |

*Increase.

## STOCKS

| | Sept. 30, 1928 | †Aug. 31, 1928 | Sept. stock decreases | †Sept. 30, 1927 |
|---|---|---|---|---|
| Heavy crude, heavier than 20 degrees A.P.I., including all grades of fuel | 97,690,674 | 95,781,762 | *1,908,912 | 95,006,723 |
| Refinable crude, 20 degrees A.P.I. and lighter | 17,730,034 | 19,205,105 | 1,475,071 | 23,025,124 |
| Gasoline | 11,351,695 | 11,683,443 | 331,748 | 13,072,463 |
| Naphtha distillates | 1,255,309 | 1,184,998 | *70,311 | 2,672,994 |
| All other stocks | 10,079,930 | 10,588,689 | 508,759 | 9,860,777 |
| Total all stocks | 138,107,642 | 138,443,997 | 336,355 | 143,638,081 |

*Increase. †Revised.

Due to correction in gasoline stock figures previously reported for the period from May, 1927, to June, 1928, and all stocks for August, 1928, revised stock figures for Pacific Coast territory are shown below:

| 1927: | Heavy crude and fuel | Refinable crude | Gasoline | Naphtha distillates | All other stocks | Total |
|---|---|---|---|---|---|---|
| May 31 | 92,812,985 | 27,365,926 | 13,852,780 | 3,659,951 | 9,924,425 | 147,616,067 |
| June 30 | 93,326,393 | 27,175,071 | 13,851,828 | 3,517,038 | 9,716,166 | 147,586,496 |
| July 31 | 94,390,140 | 25,639,883 | 13,385,897 | 3,413,614 | 9,943,525 | 146,773,059 |
| August 31 | 94,589,976 | 23,931,170 | 13,130,611 | 3,104,755 | 9,444,877 | 144,201,389 |
| September 30 | 95,006,723 | 23,025,124 | 13,072,463 | 2,672,994 | 9,860,777 | 143,638,081 |
| October 31 | 94,984,154 | 21,841,747 | 13,399,761 | 2,351,849 | 9,860,235 | 142,437,746 |
| November 30 | 95,212,430 | 21,371,274 | 13,527,472 | 2,039,755 | 9,745,428 | 141,896,359 |
| December 31 | 94,907,147 | 20,268,569 | 13,712,030 | 1,901,279 | 9,529,592 | 140,318,617 |
| 1928: | | | | | | |
| January 31 | 95,621,539 | 20,784,053 | 13,897,623 | 1,820,900 | 9,251,941 | 141,376,056 |
| February 29 | 96,239,379 | 20,676,318 | 14,247,079 | 1,845,109 | 9,187,790 | 142,195,675 |
| March 31 | 95,880,671 | 20,215,802 | 14,779,259 | 1,633,736 | 9,268,718 | 141,778,186 |
| April 30 | 95,398,359 | 19,685,626 | 14,734,542 | 1,778,981 | 9,122,118 | 140,719,626 |
| May 31 | 94,889,736 | 19,875,112 | 14,195,792 | 1,745,312 | 9,359,507 | 140,065,459 |
| June 30 | 95,284,117 | 19,955,030 | 14,000,061 | 1,595,566 | 9,643,973 | 140,479,347 |
| *July 31 | 96,418,224 | 19,041,594 | 12,908,549 | 1,429,410 | 9,955,530 | 139,753,307 |
| August 31 | 95,781,762 | 19,205,105 | 11,683,443 | 1,184,998 | 10,588,689 | 138,443,997 |

*July figures unchanged.

## DEVELOPMENT

| District— | New rigs up | Active drill'g | Comp. | Daily initial output | Active prod'g | Abd. wells Drlrs. | Prdrs. |
|---|---|---|---|---|---|---|---|
| Kern River | 1 | 4 | ... | ..... | 1,167 | 1 | ... |
| Mount Poso | 9 | 5 | 6 | 2,300 | 4 | 2 | ... |
| Fruitvale | ... | 6 | ... | ..... | 2 | ... | ... |
| Round Mountain | 2 | 4 | 1 | 1,000 | 2 | ... | ... |
| McKittrick | 2 | 3 | ... | ..... | 288 | 1 | 1 |
| Midway-Sunset | 5 | 9 | 9 | 2,392 | 2,539 | 5 | 25 |
| Elk Hills | ... | 1 | ... | ..... | 207 | ... | ... |
| Lost Hills-Belridge | 5 | 3 | 4 | 193 | 307 | ... | ... |
| Coalinga | ... | 1 | ... | ..... | 789 | ... | 12 |
| Wheeler Ridge | ... | ... | 1 | 40 | 34 | ... | ... |
| Watsonville | ... | ... | ... | ..... | 7 | ... | ... |
| Santa Maria | ... | 5 | 1 | 200 | 227 | ... | ... |
| Summerland | ... | ... | ... | ..... | 89 | ... | ... |
| Elwood-Goleta | 5 | 4 | ... | ..... | 4 | ... | ... |
| Rincon | ... | 6 | 1 | 565 | 20 | ... | ... |
| Ventura Avenue | 9 | 36 | 2 | 2,825 | 130 | ... | ... |
| Ventura-Newhall | 4 | 24 | 3 | 123 | 517 | 2 | ... |
| Los Angeles-Salt Lake | ... | ... | ... | ..... | 325 | ... | 4 |
| Whittier | ... | ... | ... | ..... | 170 | ... | ... |
| Fullerton | 1 | 3 | 1 | 2,075 | 379 | 1 | ... |
| Coyote | 2 | 1 | 1 | 250 | 210 | ... | ... |
| Santa Fe Springs | 103 | 158 | ... | ..... | 293 | ... | 4 |
| Montebello | ... | 1 | 1 | 25 | 170 | ... | ... |
| Richfield | 3 | 9 | 1 | 225 | 267 | ... | ... |
| Huntington Beach | 7 | 10 | 3 | 683 | 566 | 3 | 8 |
| Long Beach | 31 | 157 | 21 | 40,803 | 800 | 2 | 2 |
| Torrance | ... | ... | ... | ..... | 678 | ... | 3 |
| Dominguez | 2 | 1 | ... | ..... | 73 | ... | ... |
| Rosecrans | 1 | 2 | ... | ..... | 109 | ... | ... |
| Inglewood | ... | ... | 2 | 610 | 220 | ... | ... |
| Newport | 1 | 2 | ... | ..... | 2 | ... | 5 |
| Seal Beach | 2 | 6 | 1 | 655 | 134 | 1 | 4 |
| Potrero | 1 | 3 | ... | ..... | 1 | ... | ... |
| Miscellaneous drilling | 10 | 118 | ... | ..... | ... | 9 | ... |
| September | 206 | 582 | 59 | 54,964 | 10,670 | 27 | 68 |
| August | 149 | 468 | 57 | 30,058 | 10,663 | 17 | 21 |
| Increase | 57 | 114 | 2 | 24,906 | 7 | 10 | 47 |
| Average for year 1927 | 97 | 404 | 75 | 39,992 | 11,276 | 23 | 21 |
| Average for year 1926 | 95 | 422 | 76 | 32,635 | 11,288 | 24 | 17 |
| Average for year 1925 | 105 | 417 | 79 | 42,247 | 11,393 | 28 | 12 |
| Average for year 1924 | 103 | 510 | 103 | 42,412 | 10,903 | 28 | 21 |
| Average for year 1923 | 111 | 759 | 82 | 114,690 | 8,928 | 24 | |

# TEXAS PANHANDLE WILDCATS

(Continued from Page 39)

**CHILDRESS COUNTY**

C. L. Sloane et als' No. 1 B. P. Smith, Sur. 49, F. P. Knott lands ..... S.D. 4,005 ft.

The Texas Co.'s No. 1 Smith, 100 ft. each way from NW cor. Sec. 174, Blk. H, W.&N.W. Sur. ..... T.D. 3,800 ft; U.R. 6-in. 3,550 ft.

**COCHRAN COUNTY**

Clark & Melat's No. 1 C. C. Slaughter, 1,650 ft. E and 660 ft. S of NW tract, League 118, Knox County School land ..... Rig blown down.

Marland Prod. Co.'s No. 1 C. C. Slaughter, 330 ft. from S and W lines, Carson County School land, Tr. 130 ..... Fish. 1,550 ft.

**COTTLE COUNTY**

Explin. Co.'s No. 1 Richards ..... Spudded and S.D.

Explin. Co.'s No. 4 Matador Land & Cattle Co., C, Sec. 46, J. H. Stephens Sur. ..... Spud and S.D.

Skelly Oil Co.'s No. 1 J. H. Cannon ..... H.F.W. 3,558 ft; fish. 3,610 ft.

Sun Oil Co.'s No. 1 T. B. Yarborough, 485 ft. S and 2,460 ft. E of NW cor. Sec. 551, Blk. H, W.&N.W. Sur. ..... Drlg. 2,810 ft.

**FLOYD COUNTY**

Explin. Co.'s No. 1 S. H. Boone, C. C. H. Johnson Sur. ..... S.D. 4,015 ft.

**GRAY COUNTY**

Adams Oil Co.'s No. 2 Morse, 330 ft. from E line and 990 ft. from S line, Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... Drlg. 310 ft.

B. S. Arnold's No. 1 E. Mingale, cen. east 160 acres, Sec. 212, Blk. B-2, H.&G.N. Sur. ..... Rig.

Arnold & Howell's No. 1 Turnex, C SW, Sec. 111, Blk. B-2 ..... S.D. 2,224 ft. for pipe.

Biggs et als' No. 1 Morse, SW cor. Sec. 3, Blk. 26, H. &G.N Sur. ..... 10,000,000 ft. gas 2,192-2,250 ft; C.O. 2,590 ft.

Camel Oil Co.'s No. 1 Harrah-B, 330 ft. each way from NW cor. NE. Sec. 150, Blk. 3, I.&G.N.R.R. Sur. ..... Cellar.

Crabtree Drlg. Co.'s No. 1 B. F. Talley, SW NE. Sec. 114, Blk. M-2, B.S.&F. Sur. ..... S.D. 2,350 ft.

Danciger et als' No. 1 Shaw, 1,000 ft. N and 330 ft. W SE cor. SW, Sec. 5, Blk. 1, A.C.H.&B. Sur. ..... 35,000,000 ft. gas 2,290 ft; show oil 2,610-18 ft; S.D. 2,683 ft.

Danciger O. & R. Co.'s No. 2 J. S. Morse, 330 ft. each way from NE cor. SW, Sec. 2, Blk. 26, H.&G. N.R.R. Sur. ..... Rig.

Danciger Oil Co.'s No. 1 Thut, 330 ft. from N and E lines L 90 acres W½, Sec. 3, H.&G.N. Sur. (1 mile E of LeFors) ..... 30,000,000 ft. gas 2,270-2,455 ft; show oil 2,740-80 ft; T.D. 2,853 ft.

Delmar Oil Co.'s No. 1 F. Foster, NW cor. SW, Sec. 55, Blk. B-2, H.&G.N. Sur. ..... Show oil; 4,000,000 ft. gas 2,835-97 ft; T.D. 3,757 ft; to plug back to 2,950 ft. and shoot.

Dunnegan et als' No. 1 M. B. Davis, 330 ft. from SE cor. S½ NW, Sec. 8, Blk. 1, A.C.H.&B. Sur. ..... Location.

Eslick & McKinney's No. 1 Mrs. Hopkins, 330 ft. from NE. E ½ NE, Sec. 84, Blk. B-2, H.&G.N. Sur. ..... Bldg. rig.

Sines & Reiger's, formerly Eslick et als' No. 1 Mrs. J. A. Hopkins, NW cor. W 80 acres of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ..... S.D. 3,206 ft.

Ezell et als No. 1 J. M. Bell, SE cor. NW, Sec. 183, Blk. B-2, H.&G.N. Sur. ..... Rig.

Get Oil Co.'s No. 1 LeFors Townsite, 765 ft. from E line and 1,397 ft. from S line, being center of Lot 16, Blk. 5 ..... Derrick.

Gulf Prod. Co.'s No. 6 J. B. Bowers-A, 330 ft. S and E of NW cor. W ½, Sec. 89, Blk. B-2, H.&G.N. Sur. ..... Rig.

Gulf Prod. Co.'s No. 3 Holmes-A, 330 ft. N and E of SW cor. W½ SE, Sec. 87, Blk. 3, I.&G.N. Sur. ..... Drlg. 1,785 ft.

Gulf Prod. Co.'s No. 1 McLarty, 150 ft. N and 482 ft. W of SE cor. NE, Sec. 2, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 2,360 ft.

Gulf Prod. Co.'s No. 1 Saunders, 990 ft. N and 330 ft. E of SW cor. Sec. 3, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 100 ft.

Gardner Bros. et als' No. 1 Ball, 323 ft. from N line and 336 ft. from E line of W 186.3 acres of N½, Sec. 3, Blk. B-2, H.&G.N. Sur. ..... Flowed 85 bbls. 2,696-2,741 ft.

Gardner, Collins et als' No. 1 Saunders, 330 ft. each way from NE cor. of S 49 acres of W 100 acres, Sec. 3, B.&B. Sur. ..... Cellar.

Landreth Prod. Corp.'s No. 1 Langham, SE cor. to 79 acres of N½, Sec. 1, Blk. 2, H.&G.N. Sur. ..... 40,000,000 ft. gas 2,090-2,300 ft; 5 bbls. per hr. 2,750-63 ft.

LeFors Pet. Co.'s No. 3 Shaw, 990 ft. S and 375 ft. E of NW cor. T. Leach Sur. ..... 30,000,000 ft. gas 2,075-2,340 ft; oil pay 2,631-43 ft; salt wtr. 2,655-60 ft; made 300 bbls. fluid 50% wtr.

LeFors Pet. Co.'s No. 8 Shaw, 288 ft. from N line and 1,091 ft. from E line of T. Leach Sur. ..... Drlg. 1,670 ft.

LeFors Pet. Co.'s No. 3 J. M. Shaw, 293 ft. from N line and 271 ft. from E line of Leach Sur. ..... Rig.

LeFors Pet. Co.'s No. 4 J. M. Shaw, 1,650 ft. from N line and 375 ft. from W line, T. Leach Sur. ..... Location.

Magnolia Pet. Co.'s No. 2 Archer, SE N½ SE Sec. 174, Blk. 2 ..... Drlg. 940 ft.

Magnolia Pet. Co.'s No. 2 W. Harrah, 990 ft. from N line and 330 ft. from W line of NW, Sec. 150, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,300 ft.

Magnolia Pet. Co.'s No. 3 W. Harrah, 330 ft. from NE cor. NW, Sec. 150, Blk. 3, I.&G.N. Sur. ..... Rig.

Magnolia Pet. Co.'s No. 3 fee, 600 ft. from S line and 330 ft. from E line, Sec. 11, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,440 ft.

Magnolia Pet. Co.'s No. 1 Saunders, 330 ft. from SE W½ of NW, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Drlg. 1,290 ft.

McElroy Oil Co.'s No. 2 Bruce Bull, 155 ft. from N line and 240 ft. from W line of E 87.3 acres of Sec. 3 Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,280 ft.

McMan O. & G. Co.'s No. 2 Binkley, 330 ft. each way from NW cor. W½ SE cor. Sec. 86, Blk. 3, I.&G. N. Sur. ..... Drlg. 2,320 ft.

Midwest Explin. Co.'s No. 2 L. Holmes, 330 ft. from N and 357 ft. from E lines, SW, Sec. 86, Blk. 3. ..... Rig burned 2,915 ft.

Osborn et als' No. 1 E. E. Barrett, SE cor. NE. Sec. 111, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,112 ft.

Panhandle Ref. Co.'s No. 1 Saunders, 330 ft. from S and W lines of E 80 acres of E, Sec. 3, A.C.H.& B. Sur., Blk. 1 ..... Location.

Phillips Pet. Co.'s No. 3 Johns, 330 ft. each way from SW, Sec. 87, Blk. 3, I.&G.N. Sur. ..... Drlg. 2,825 ft.

Phillips Pet. Co.'s No. 1 Bob Olsen, NW cor. S½, Sec. 64, Blk. B-2 ..... T.D. 3,239 ft; plugged back to 3,230 ft; shot with 440 qts. at 3,119-3,222 ft; 600 ft. oil and 60 ft. wtr. in hole; C.O. 3,035 ft.

Plains Drlg. Co.'s No. 2 Saunder, 990 ft. from S line and 330 ft. from E line of E ½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... Rig.

Prairie O. & G. Co.'s No. 2 W. Harrah, 990 ft. from N line and 330 ft. from E line of NE 80 acres of Sec. 163, Blk. 3, I.&G.N. Sur. ..... Drlg. 3,200 ft.

Pure Oil Co.'s No. 8 Davis, 330 ft. from NW of NE, Sec. 86, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,763 ft.

Purple Sage Oil Co.'s No. 2 E. B. Johnson ..... 2,000,000 ft. gas; 200 ft. oil 2,870 ft; shot with 510 qts. 2,775-2,872 ft; 400 ft. oil; C.O. 2,875 ft.

Ray & Massie's No. 3 A. Chapman, 990 ft. from N line, 330 ft. from E line, Sec. 51, Blk. 25, H.&G.N. Sur. ..... Topped pay 2,864 ft; 600 ft. oil; to pump.

Republic Prod. Co.'s No. 1 G. H. Saunders, 330 ft. each way from SW cor. E½ NW cor. Sec. 4, Blk. 1, A. C.H.&B. Sur. ..... Drlg. 2,100 ft.

Schwald et als' No. 1 fee, 330 ft. each way from NE cor. E ½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur. ..... Spud.

Shamrock Oil Co.'s No. 2-A Chapman, 330 ft. each way NW cor. of W 41.6 acres of E½, Sec. 50, Blk. 50, H.&G.N.R.R. Sur. ..... Location.

Shamrock Oil Co.'s No. 1 W. S. Clayton, 866 ft. from NW cor. of E 278.4 acres, Sec. 50, Blk. 25, H.&G.N. ..... Cmt. 8¼-in. csg. 2,196 ft. and S.D.

Shamrock Pet. Co.'s No. 1 W. P. Dial, 330 ft. S and E of NW cor. Sec. 49, Blk. 25, I.&G.N. Sur. ..... Drlg. 3,297 ft.

Skelly Oil Co.'s No. 1 Ball, 257 ft. from E line and 267 ft. from S line of SE 160 acres in Sec. 2, Blk. B-2, H.&G.N. Sur. ..... Flowed 85 bbls. 2,585-2,622 ft; S. D. 2,800 ft.

# EVER READY PROTECTOR

CORRECT PUMPING *Spot* FOUND IN ONE INSTALLATION

CONTROL *of* TUBING AT TOP OF WELL

NO — ANCHOR NECESSARY

ADJUSTABLE

POSITIVE TUBING PROTECTION *at* ALL TIMES

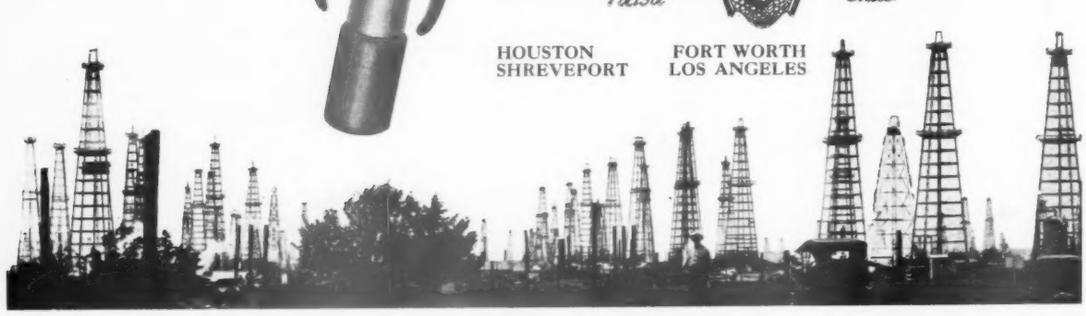
NO — AGITATION OF SAND

REDUCES PULLING EXPENSE

SMITH SEPARATOR COMPANY

Tulsa Okla

HOUSTON FORT WORTH
SHREVEPORT LOS ANGELES



Skelly Oil Co.'s No. 1 Saunders, 330 ft. from E line, 990 ft. from S line, SW. Sec. 4, Blk. 1, A.C.H.&B. Sur. . . Location.
Skelly Oil Co.'s No. 2 Saunders, 231 ft. from S line, 1,127 ft. from W line, SW. Sec. 4, Blk. 1, A.C.H.&B. Sur. . . Location.
Skelly Oil Co.'s No. 3 Saunders, 330 ft. from N line and 990 ft. from W line, SW cor., Sec. 4, Blk. 1, A.C. H.&B. Sur. . . Location.
Skelly Oil Co.'s No. 4 Saunders, 330 ft. from N line and 990 ft. from E line, SW cor., Sec. 4, Blk. 1, A. C.H.&B. Sur. . . Location.
St. Clair Oil Co.'s No. 1 Rowe, Sec. 32, Blk. R. . . S.D. 1,600 ft.
St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor. Sec. 35, W. R. Lee Sur. . . Spudded and S.D.
The Texas Co.'s No. 5 A. Chapman, 1,138 ft. from W and 330 ft. from S lines, SE, Sec. 51, Blk. 25, H. &G.N. Sur. . . Cellar.
The Texas Co.'s No. 3 Davis, 990 ft. from E line and 330 ft. from N line NW., Sec. 86, Blk. 3, I.&G.N. Sur. . . Drlg. 1,260 ft.
The Texas Co.'s No. 3 M. B. Davis, 2,309 ft. from S line and 2,312 ft. from E line, Sec. 8, Blk. 1, A.C. H.&B. Sur. . . Drlg. 790 ft.
The Texas Co.'s No. 4 H. M. Davis, SE cor. NW, Sec. 86, Blk. 3, I.&G.N. Sur. . . Drlg. 400 ft.
The Texas Co.'s No. 3 McLarty and Lester-A, 330 ft. from NE W½ SW, Sec. 1, Blk. 1, A.C.H.&B. Sur. . . . . Drlg. 2,390 ft.
The Texas Co.'s No. 1 Bull, 1,043 ft. from N and 330 ft. from E lines, Sec. 2, Blk. B-2, H.&G.N. Sur. . . . . Drlg. 2,260 ft.
The Texas Co.'s No. 3-C Thut, 370 ft. from S and 349 ft. from E lines, Sec. 11, H.&G.N. Sur. . . . . Drlg. 2,659 ft.
The Texas Co.'s No. 3 J. E. Williams, 257 ft. from W line and 325 ft. from N line, Sec. 6, Blk. 1, A.C. H.&D. Sur. . . Spraying 20 bbls. daily 2,778-2,813 ft.
Travis et als' No. 1 S. Morse, SE NW SW, Sec. 65, Blk. 25, H.&G.N. Sur. . . Pulled rig in 1,900 ft.
Ware et als' No. 1 fee, 990 ft. from N and 400 ft. from W lines, Sec. 18, Blk. 3, A.&B.M. Sur. . . Rig.
Wilcox Pampa Oil Co.'s No. 29 Wooley & Reynolds, 330 ft. S and W of NE SW, Sec. 61, Blk. 3, I.&G.N. Sur. . . Drlg. 2,990 ft.
Wilcox Pampa Oil Co.'s No. 30 Wooley & Reynolds, NW SE NW, Sec. 61, Blk. 3 . . Drlg. 2,470 ft.
United Eight O. & T. Co.'s No. 1 E. B. Clay, SE cor. W½ SW, Sec. 177, Blk. B-2 . . Drlg. 2,950 ft.

**HALL COUNTY**

Rio Bravo Oil Co.'s No. 1 Hughes est., 950 ft. from N line, 150 ft. from E line, Sec. 39, Blk. H, I. A. Stephens Sur. . . Set 6-in. 3,600 ft.

**HOCKLEY COUNTY**

World Oil Co.'s No. 1 Ellwood, 320 ft. from N and W lines, League 7, Wilbarger County school lands; elevation 3,362 ft; contract depth, 5,000 ft. . . S.D. 1,455 ft.

**HARTLEY COUNTY**

Amarillo Oil Co.'s No. 9 Lee Bivins "A," C NW, Sec. 6, Blk 21 . . 15,000,000 ft. gas 3,300-35 ft; S.D. 3,335 ft.

**HUTCHINSON COUNTY**

R. G. Barnum et als' No. 1 Garland Sanford, Sec. 78, Blk. 4* . . S.O. 2,920 ft; S.D. 2,975 ft; 500 ft. wtr; C.O.
Barnum & Delmar's No. 1 Johnson Bros., NW cor. E½, NW, Sec. 37, Blk. Y, A.&B. Sur. . . 2,000 ft. oil 2,954-3,011 ft; swb. 150 bbls. after 160-qt. shot; T.D. 3,020 ft; to deepen.
Devonian Oil Co.'s No. 9 Johnson Bros., 330 ft. S and W of NE cor. of Lot 3, Johnson Bros. Subdivision, M. Whitley Sur. . . Drlg. 850 ft.
Dunnigan et als' No. 1 C. W. Hugenbyhl, 330 ft. from S line and 330 ft. from E line, N½, Sec. 4, Blk. T. W.N.G.R.R. Sur. . . Rig.
Oil Operators Trust Co. and Marland's No. 2 J. M. Stanford-B, Sec. 82, Blk. 46, H.&T.C. Sur. . . S.D. 3,039 ft.
Phillips Pet. Co.'s No. 12 Elva Whittenburg, E. Tomlinson Sur. . . S.D. 5,333 ft.
Phillips Pet. Co.'s No. 3 Johnson Bros. (Florence), 413 ft. from W and 270 ft. from N lines, Tract 2, of Geo. Montgomery Sub-div. of Mary Whitley Sur. . . Drlg. 2,125 ft.
Phillips Pet. Co.'s No. 19 Perkins-Martin, 990 ft. S and 330 ft. E of NW cor. of W 240 acres of S 320 acres of Sec. 1, Blk. X02, H.&O.B. Sur. . . Location.
Phillips Pet. Co.'s No. 1 Sanford-Felix, 330 ft. S and E of NW cor. of S 40 acres of E 80 acres of S 160 acres of Sec. 77, Blk. 46, H.&T.C. Sur. . . Drlg. 2,835 ft.
Phillips Pet. Co.'s No. 1 Sanford-Garford, 330 ft. N and E of SW cor. N 40 acres of E 80 acres of S 160 acres of S 320 acres, Sec. 77, Blk. 46, H.&T. C.R.R. Sur. . . Drlg. 550 ft.
Premier O. & G. Co.'s No. 1 L. E. Borton, C NE NW NW, Sec. 32, Blk. Y, A.&B. Sur. . . Rigged up and S.D.
Rock Creek Oil Co.'s No. 3 Johnson, 330 ft. from N and W lines SW SE, Sec. 28, Blk. Y, A.&B. Sur. . . S.D. 2,700 ft.
Sand Creek Oil Co.'s No. 2 J. H. Jasper, 320 ft. from S line and 387 ft. from W line of 100-acre lease, Sec. 23, Blk. M-23, T.C. Sur. . . T.D. 3,148 ft; P.B. to 3,136 ft; shot with 220 qts. 3,036-3,136 ft; T.P. 300 bbls. fluid 50% wtr.
Timms et als' No. 2 Garner, 990 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. . . Drlg. 520 ft.
Wendell et als' No. 1 Johnson Bros., Sec. 1, Blk. X02 . . Set 10-in. csg. 2,035 ft; S.D.
White Eagle Oil Co.'s No. 4 Johnson Bros. (Montgomery) 330 ft. from N and W lines E½, Tract 2, Geo. Montgomery Sub-div. of Mary Whitley Sur. . . S.D. 1,010 ft.

**KING COUNTY**

Humble O. & R. Co.'s No. 1 Pitchfork, Sec. 171, Blk. A-96, John H. Gibson Sur. . . Drlg. 4,543 ft.
The Texas Co.'s No. 1 J. H. Johnson . . Drlg. 4,000 ft.

**LAMB COUNTY**

Dan Freel et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. . . Spudded and S.D.

**LUBBOCK COUNTY**

Center Oil Co.'s No. 1 Bowles ranch. . . Small show oil 1,133-40 ft; sand; S.D. 3,943 ft.

**MOORE COUNTY**

Barnsdall Oil Corp.'s No. 1 L. R. Hagy, NW cor. Thomas Ross Sur. . . Cmt. 8¼-in. csg. 2,600 ft.
Devonian Oil Co.'s No. 1 J. T. Sneed, Jr., 2,235 ft. from E and 330 ft. from S lines, S 160 acres, N 320 acres of Matilda Robinson Sur. . . Rig.
Dixie Creek Oil Co.'s No. 1-A Sneed, Jr., 330 ft. N and W of SE cor. E½, Sec. 65, Blk. 3, G.M. Sur. . . Drlg. 2,060 ft.
Dixie Creek Oil Co.'s No. 4-A Sneed, Jr., 330 ft. S and W of NE cor. E½, Sec. 65, Blk. 3 . . Drlg. 2,100 ft.
Fritch & G. Co.'s No. 1 Lee Burns, C NE 40 acres of N 160 acres, Sec. 4, Geo. Mahan Sur. . . Spudded and S.D.
McMan O. & G. Co.'s No. 1 Sneed, 2,260 ft. S and 330 ft. W of NW cor. J. W. Proctor Sur., but in Matilda Robinson Sur. . . Drlg. 230 ft.
Phillips Pet. Co.'s No. 1 J. T. Sneed (James) 330 ft N and W of SW cor. P. Bazemore Sur. . . Drlg. 2,157 ft.
Phillips Pet. Co.'s No. 2 J. T. Sneed, 660 ft. S and 330 ft. W of NW cor. J. H. Proctor Sur. . . Drlg. 1,820 ft.
Phillips Pet. Co.'s No. 3 Sneed (James), 600 ft. S and 330 ft. W of NW cor. J. W. Proctor Sur., but in Matilda Robinson Sur. . . Rig.
Prairie and Shamrock's No. 3 Gober, 2,302 ft. from N and 890 ft. from W lines of Sec. 16, Blk. M-1, G. &M. Sur. . . Set 8-in. 2,696 ft; 20,000,000 ft; gas 2,745-3,366 ft; cmt. 6-in. 3,505 ft; 1,000 ft. wtr. 3,705 ft; T.D. 3,745 ft; to P.B.
Skelly Oil Co.'s No. 4 Armstrong & Byrd, 1,600 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. . . Stdzng. 1,480 ft.
Skelly Oil Co.'s No. 5 Armstrong & Byrd, 2,260 ft. S and 330 ft. E of NW cor. J. W. Proctor Sur. . . Rig.

**MOTLEY COUNTY**

Texpitn. Co.'s No. 1 Tillson. . . S.D. 750 ft. for repairs.
Texpitn. Co.'s No. 2 Matador Land & Cattle Co., C SW Sec. 37, John Gibson Sur. . . S.D. 4,000 ft.

**ROBERTS COUNTY**

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. 5-A . . Formerly abd. at 5,240 ft; small show 36 grav. oil 5,283-91 ft; drlg. 5,572 ft.

**WHEELER COUNTY**

Angus et als' No. 2 Morgan, C E½ NW NE, Sec. 93, Blk. 17, H.&G.N. Sur. . . Rig.
Arnold Oil Co. et als' No. 1 Ritchey, 420 ft. from E and 460 ft. from S lines of NW cor., Sec. 5, Blk. 24, H.&G.N. Sur. . . Rig.
Byrens et als' No. 1 Johnson, SW cor. NE, Sec. 88, Blk. A-5, H.&G.N. Sur. . . Drlg. 1,380 ft.
Chapman & Morgan's No. 1 Otis Hatcher, NW cor. SW SE, Sec. 63, Blk. 17, H.&G.N. Sur. . . S.D. 715 ft.
Consolidated Gas Utilities Co.'s No. 1 M. Ackley-A, 660 ft. each way from NW cor. W½ SW, Sec. 20, Blk. 24, H.&G.N. Sur. . . 53,000,000 ft. gas 1,855-1,925 ft.
Lone Star Co.'s No. 1 Ackley, C NE NE, Sec. 20, Blk. 24, H.&G.N. Sur. . . Drlg. 400 ft.
Lone Star Co.'s No. 1 Hicks, C SW NE, Sec. 52, Blk. 17, H.&G.N. Sur. . . Rig.
Lone Star Co.'s No. 1 Shelton, C NE SE, Sec. 22, Blk. 24, H.&G.N. Sur. . . Location.
Lone Star Co.'s No. 1 Trostle, C NW NE, Sec. 90, Blk. 17, H.&G.N. Sur. . . Drlg. 1,715 ft.
Martin & Debon's No. 1 Gossett, C SE SE, Sec. 101, Blk. 23, H.&G.N. Sur. . . Drlg. 1,625 ft.
L. W. Rook's No. 1 M. Nelson, C SW NE, Sec. 5, Blk. 24, H.&G.N. Sur. . . Fish. 1,950 ft.
L. W. Rock's No. 2 A. Smock, C SW SE, Sec. 5, Blk. 24, H.&G.N. Sur. . . Rig.
Upham Gas Co.'s No. 1 Lamb, C N½ NE SW, Sec. 91, Blk. 17, H.&G.N. Sur. . . Drlg. 310 ft.
White et als' No. 1 J. M. Shelton, C SW NE, Sec 100, Blk. 17 . . Top lime 2,094 ft; drlg. 2,192 ft.

## WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 40)

**CONCHO COUNTY**

Exploration Co.'s No. 2 Hartgrove, 996 ft. S and 985 ft. E of NW cor. Johann Scheuch Sur. No. 249. . . Rig.
Kimberlin et al's No. 1 Maloy, Sec. 319, Ludwig Winkle Sur. . . Shut down 1,460 ft.
Posey's No. 1 Elvidge, C NW Sec. 39, H.&T.C.R.R. Sur. . . Shut down 300 ft.

**CRANE COUNTY**

C. C. Duffy et al's No. 3 Cowden Bros., 200 ft. N and W of SE cor. SW Sec. 18, Blk. X, C.C.S.D.&R.G.N.G. Sur. . . Top salt 625 ft.; drlg. 1,260 ft.
Gulf Production Co.'s No. 56 J. T. McElroy, 2,102 ft. S and 48 ft. W of NE cor. of their lease, Section 201, Blk. F, C.C.S.D.&R.G.N.G.R.R. Co. Sur. . . Drlg. 1,185 ft.
Gulf Production Co.'s No. 5 W. N. Waddell, 330 ft. N, and280 ft. W of SE cor. NE Sec. 11, Blk. 25. . . Top salt 1,215 ft.; top lime 3,100 ft.; 1,000,000 ft. gas 3,115-34 ft.; drlg.
J. K. Hughes Dev. Co.'s No. 1 State Bank Commission, 2,310 ft. from NW line and 990 ft. from NE line Sec. 23, Blk 4, H.&T.C.R.R. . . Top salt 525 ft.; top lime 2,480 ft.; 1,000 ft. sulphur water in hole; shut down 3,651 ft.
Simms-Atlantic's No. 2 University-B, 990 ft. N and E of SW cor. Sec. 34, Blk. 30, University Land. . . Drlg. 1,175 ft.
Texas & Pacific C. & O. Co.'s No. 2 University, 2,310 ft. S and 1,650 ft. W line Sec. 34, Blk. 30, University Land . . Location.
Tidal Oil Co.'s No. 1 University-D, 990 ft. from W and 1,650 ft. from S lines, Sec. 34, Blk. 30, University Land . . Drlg. 865 ft.

**CROCKETT COUNTY**

Barbara Oil Co.'s No. 1 Cox, 237 ft. S and 1,190 ft. E of NW cor. R. B. Dickenson Sur. . . Drlg. 725 ft.
V. T. Bolin & Co.'s No. 1 P. C. Coates, NW cor. SW Sec. 4, Blk. 2, I.&G.N. Sur. . . Cleaning out 2,110 ft.
T. W. Callahan et al's No. 1 J. S. Todd, C SW Sec. 13, Blk. "YZ," E.L.&R.R. Sur. . . Top salt 905 ft.; set 8-in. casing 1,155 ft.; 2,000,000 ft. gas 1,205 ft.; drlg. 1,910 ft.
Compton's Co.'s No. 1 University Land, 1,875 ft. N and 916 ft. E of SW cor. Sec. 15, Blk. 50, University Land . . Shut down 2,062 ft.; 300 ft. oil in hole at total depth and 1,200 ft. water 1,965-85 ft.; drlg. 2,200 ft.
W. W. Donnelly & Young's No. 1 Massey, Sec. 29, Blk. U-V . . Shut down 380 ft.
W. W. Donnelly & Young's No. 1 Shannon, SW SW SE Sec. 42, Blk. BB, T.C.R.R. Sur. . . Spudded and shut down.
W. W. Donnelly & Young's No. 1 Middlebuster, C Sec. 11, Blk. 9, D.&S.E. Sur. . . 7,000,000 ft. gas at 1,662 ft.; cleaning out 1,680 ft. (cor.).
Fuhrman Pet. Corp.'s No. 1 Pagett, 330 ft. from CNEL Sec. 17, S. C. White Sur. A-3,003 . . Set 8-in. casing top lime 1,475 ft.; drlg. 1,745 ft.
Moncrief, Zoch et al's No. 1 J. H. Tippett, 330 ft. from C NE line Sec. 45, Blk. 31, H.&T.C.R.R., but in Sec. 1, Blk. JH . . Location.
Texas-Canadian Oil Co.'s No. 1 University, 330 ft. from N and 305 ft. from E lines, Sec. 4, Blk. 33 . . Drlg. 185 ft.
J. D. Wheeler's No. 1 State Land, 744 ft. S and 1,250 ft. E from SE cor. Sec. 73, Blk. 1, O.&G.N.R.R., but in Vacancy Strip . . Drlg. 285 ft.

**CULBERSON COUNTY**

Deep Rock Oil Co.'s No. 2 Seay, 200 ft. N and 250 ft. E of CSL Sec. 20, Blk. 59, T.&P. Sur. . . Location.
W. S. Hillyer's No. 1 McGregor, C NW Sec. 14, Blk. 81. . . Standard rig and ready to spud.
Hickey & Stiver's No. 1, C. O. Finley, 660 ft. N and 1,980 ft. W. Sec. 20, Blk. 82. . . Hole full water; small oil show 1,381 ft.; pipe set 1,418 ft.; total depth 1,568 ft., sandy lime; trying to shut off water.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E Sec. 1, Blk. 97, Public School Land . . Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; shut down for casing 1,767 ft.

**DAWSON COUNTY**

Magnolia Petroleum Co.'s No. 1 W. A. Jetter, C Sec. 1, Blk. 34, Twp. 4-N. . . Drlg. 1,450 ft., red rock.

**ECTOR COUNTY**

Pennsylvania Drlg. Co.'s No. 1 W. E. Connell, C NE Sec. 7, Blk. B-16. . . Location.

**EL PASO COUNTY**

Sillix et al's No. 1 W. D. Malone, Sec. 46, James M. Day Sur. . . Set 12½-in. casing 1,010 ft.; shut down 1,010 ft.

**FISHER COUNTY**

Bickerstaff et al's No. 1 McWhirter, 2,640 ft. E and 150 ft. N of SW cor. of Sec. 295, Blk. 2, H.&T.C. . . Shut down 1,328 ft.
Cranfill & Reynolds' No. 1 J. L. Sharp, C NE of SW Sec. 207, B.B.B.&C. Sur. . . Drlg. 190 ft.
Cranfill & Reynolds' No. 1 E. G. Young, C of NW of SW of Sec. 199, B.B.B.&C. Sur. . . Drlg. 2,725 ft.
Hucony Gas Co.'s No. 1 D. F. Maberry, 1,078 ft. S and 188 ft. W of NE cor. Elijah Bell Survey No. 327. . . Drlg. 1,500 ft.
Midwest Exploration Co.'s No. 2 Decker, 330 ft. S and E of NW cor. of S 60 ac. of W 160 ac. of N 320 ac. of Sec. 8, Blk. R, W. E. Richardson Sur. . . Location.
Midwest Exploration Co.'s No. 1 Higginbotham, Sec. 8, Blk. R . . Location.
Roeser & Pendleton's No. 1-B Decker, 455 ft. N and 330 ft. E of SW line of N 160 ac. of W 160 ac. of N 320 ac. of Sec. 8, Blk. R. W. E. Richardson Sur. . . Fishing for bit 2,180 ft.
Sun et al's No. 2 Young, Sec. 208, Blk. 1, C NE SE, B.B.B.&C. Sur. . . Drlg. 2,770 ft.

**GAINES COUNTY**

Pure Oil Co.'s No. 1 A. A. Williamson, 1,650 S and 330 ft. W of NE cor. of Sec. 110, Blk. E, D.&W.R.R. . . Moving in material.

### GLASSCOCK COUNTY

Josey & Finchbaugh's No. 1 S. R. Cox, 1,320 ft. W or NE cor. and located on the N line of Sec. 29, Blk. 33, Twp. 4s, T.P.R.R. Sur. — Hole full salt water 780 ft.; hole full salt water 1,801-15 ft.; set 6-in. casing 2,607 ft.; top lime 2,602 ft.; drlg. 3,125 ft.

World Oil Co.'s No. 2 L. S. McDowell, SW SE SW Sec. 32, Blk. 34, Twp. 2s, elev. 2,523 ft., contract depth 3,200 ft. — Top salt 925 ft.; 8-in. casing set 2,025 ft.; drlg. 2,980 ft.; hole full salt water.

### HOWARD COUNTY

Andrews & McCamey's No. 1 Neal, 200 ft. S and W of NE cor. Sec. 17, Blk. 32, Twp. 1s. — Shut down 1,900 ft.

Bristow & Merrick's No. 2 D. Roberts, 990 ft. E and 330 ft. N of SW Sec. 137, Blk. 29, W.&N.W.R.R. Sur. — Drlg. 1,650 ft.

Bristow & Merrick's No 3 Dora Roberts, 1,650 ft. E and 330 ft. N of SW cor. Sec. 137, Blk. 29. — Drlg. 2,925 ft.

W. W. Donnelly et al's No. 1 Clay, SW cor. W half NE Sec. 127, Blk. 29, W.&N.W. — 700 ft. oil in hole from 1,919-27 ft.; 8 bbls. water 2,635-50 ft.; sulphur water 3,040 ft.; total depth 3,135 ft.; plugging back 1,900 ft.; hole full of water.

F. H. E. Oil Co.'s No 5 Dora Roberts-B, 1,650 ft. N, 2,310 ft. W of SE cor. Sec. 137, Blk. 29, W.&N.W. — Drlg. 1,838 ft.

F. H. E. Oil Co. et al's No. 7-B Dora Roberts, 330 ft. S and E of NW of Sec. 137, Blk. 29. — Drlg. 1,003 ft.

F. H. E. Oil Co.'s No. 5-D Dora Roberts, 2,310 ft. S and 1,650 ft. E of NW cor. Sec. 136, Blk. 29. — Drlg. 1,323 ft.

Green Oil Co. et al's No. 1 J. W. Furrh, C SW cor. Sec. 11, Blk. 31 — Rig.

L. C. Harrison et al's No. 1 G. M. Podge Est., SE cor. Sec. 9, Blk. 30, T-1-S, T.&P. Sur. — Hole full salt water 1,475-1,505 ft.; top lime 1,825 ft.; preparing to drill 2,430 ft.

Henshaw Oil Corp.'s No. 1 Dora Roberts-C, 1,423 ft. S and 2,723 ft. E of NW cor. Sec. 6, Blk. 32, T-2-S, T.P. Sur. — Drlg. 720 ft.

Henshaw Oil Corp.'s No. 2-A Settles, 1,884 ft. E and 330 ft. S of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. — Location.

Louisiana Oil & Ref. Corp.'s No. 1 Kloh & Rumsey, 2,970 ft. E and 2,310 ft. S of NW cor. Sec. 3, Blk. 32, T-2S, T.&P.R.R. Sur. — Drlg. 2,248 ft.

Louisiana O. & R. Corp.'s No. 1 W. R. Settles, 2,093 ft. E and 1,432 ft. S of NW cor. Sec. 6, Blk. 32, Twp. 1s, T.&P. Sur. — Drlg. 1,065 ft.

Louisiana Oil Corp.'s No. 2 Settles, 2,306 ft. E and 330 ft. S NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. — Location.

Magnolia Pet. Co.'s No. 11 Kelly-Chalk, 1,650 ft. S and 330 ft. E of NW cor. Sec. 124, Blk. 29, W.&N.W.R.R. Sur. — Set 10-in. casing 680 ft.; drlg. 1,005 ft.

Magnolia Pet. Co.'s No. 11 Dora Roberts, 905 ft. N., 330 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Drlg. 2,660 ft.

Magnolia Pet. Co.'s No. 12 Dora Roberts, 1,650 ft. N and 330 ft. S of SW cor. Sec. 136, Blk. 29, W.& N. W. Sur. — Location.

Magnolia Pet. Co.'s No. 13 Dora Roberts, 2,440 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Set 8-in. casing 2,927 ft.

Magnolia Pet. Co.'s No. 14 Dora Roberts, 990 ft. N and 2,310 ft. W Sec. 157, Blk. 29. — Drlg. 2,040 ft.

Magnolia Pet. Co.'s No. 15 Dora Roberts, 2,310 ft. S and W Sec. 157, Blk. 29, W.&N.W. — Drlg. 2,700 ft.

Magnolia Pet. Co.'s No. 16-D Roberts, 990 ft. N and 1,650 ft. E of SW cor. Sec. 136, Blk. 29, W.&N.W. Sur. — Drlg. 630 ft.

Marland Prod. Co.'s No. 1 Dora Roberts, SW cor. Sec. 128, Blk. 29, W.&N.W. — Underreaming 1,150 ft.

Marland-Texon's No. 5-A Settles, 2,310 ft. N and 330 ft. E of Sec. 135, Blk. 29. — Top pay 2,495 ft.; top lime 2,025 ft.; fishing 2,944 ft.

Marland & Group One Co.'s No. 6-A Settles, 2,266.5 ft. S and 2,513.2 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P. Sur. — Location.

Merrick & Bristow's No. 3 D. Roberts, 1,650 ft. E and 330 ft. N of SW cor. Sec. 137, Blk. 29. — Drlg. 2,925 ft.

Phillips Pet. Co.'s No. 1 J. Thomas, 330 ft. N and W of SE cor. of Sec. 13, Blk. 33, T-1-N, T.P. Sur. — Rigging up.

Sun Oil Co.'s No. 3 W. R. Settles, 330 ft. W, 2,310 ft. N of SE cor. Sec. 135, Blk. 29 — Set 16-in. casing 250 ft.; oil show 1,800 ft.; oil show 2,345 ft.; 1 bailer per hour 2,345-55 ft.; total depth 2,991 ft.; resetting 6-in. casing 2,910 ft.

Sun Oil Co.'s No. 4 Settles, 330 ft. W and 1,650 ft. N of SE cor. Sec. 135, Blk. 29, W.&N.W. Sur. — Location.

Taylor-Link Oil Co.'s No. 1 Kloh-Rumsey, 330 ft. N and 2,310 ft. E of SW cor. Sec. 3, Blk. 32 T.&P.R.R. Sur. — Top lime 2,131 ft.; swabbing hole full of oil 2,357 ft.

Texon O. & L. Co.'s No. 1 Quinn, 330 ft. N and W of SE cor. Sec. 11, Blk. 34, Twp. 1s. — Drlg. 670 ft.

Ward Oil Co.'s No. 3 D. Roberts, 2,310 ft. N and E of SW cor. Sec. 137, Blk. 29 — Location.

Witherspoon & Glasscock's No. 1 Settles, 330 ft. S and 2,970 ft. W, Sec. 6, Blk. 32, T.&P. Sur. — Spudded with machine and shut down.

### HUDSPETH COUNTY

American Land Co.'s No. 1 Lockhart and Roseborough, C SE Sec. 5, School Blk. 21 — Shut down 260 ft.

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor. Sec. 19, Blk. E — Spudded and shut down.

Western States Oil Co.'s No. 1 Moore, C SE Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. — Drlg. 2,735 ft.

Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW Sec. 12, Blk. 18 — Hole full water 2,945 ft.; underreaming 8¼-in. casing at 2,840 ft.; trying to get water shut off; shut down 3,125 ft., orders.

### IRION COUNTY

Central Oil Corp.'s No. 1 Harlan Horney, 1,170 ft. N and 450 ft. W of SW cor. Sec. 3, Blk. 3, H.&T.C. Sur. but in Strip No. 1,026 — Shut down 200 ft.

Fuhrman Pet. Co.'s No. 1 J. O. Suggs, Lease 1, C SE Sec. 3,024, Blk. 24, H.&T.C. Sur. — Location

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 2, C SW Sec. 3,029, Blk. 24, H.&T.C. Sur. — Location.

Fuhrman Pet. Co.'s No. 1 J. D. Suggs, Lease 3, C SE Sec. 3,009, Blk. 24, H.&T.C. — Location.

Kimbrough & Tuel's No. 1 J. M. Nutt, 1,920 ft. S. 200 ft. E of NW cor. Sec. 5, Gonzales Co. School Land. — Set 6-in. casing 1,360 ft.; show oil and gas; shut down 1,400 ft.

Mertzon Oil Co.'s No. 1 Roach, Sec. 24, 1,380 varas W, 485 varas S of NE cor. Mat Roach Sur. — Oil show 1,622-30 ft.; shot 30 qts. 1,522-30 ft.; hole full water; shut down 1,925 ft.

Signal Oil Co.'s No. 1 Suggs, Sec. 9, Blk. H. T.C.R.R. Sur. — Top salt 805 ft.; drlg. 1,675 ft.

Sun Oil Co.'s No. 1 Williams, 1,190 ft. E and 330 ft. N of SW cor. Sec. 39, Blk. 21, H.&T.C.R.R. Sur. — Underreaming 1,405 ft.

F. E. Webb et al's No. 1 J. M. Nutt — Shut down 2,026 ft.

Wesley West et al's No. 1 J. D. Suggs, SE NW SE Sec. 19, Blk. 7, H.&T.C. Sur. — Shut down 3,035 ft.

C. J. Wrightsman's No. 1 Sawyer, 1,320 ft. from N and W lines Sec. 3,032, Blk. 24, H.&T.C. — Location.

### JEFF DAVIS COUNTY

J. K. Hughes Dev. Co.'s No. 2 Means, 1,622 ft. N line 600 ft. W line Sec. 345, Blk. 4, H.&T.C. — Drlg. 3,211 ft.

### JONES COUNTY

Atkinson & Sandifer's No. 1 Hudspeth, 300 ft. S of CNL Sec. 22, Miles Sur. — Drlg. 1,930 ft.

E. P. Campbell et al's No. 1 Berry, 660 ft. S and E of NW cor. of N 80 ac. of E 160 ac. of N half Sec. 15, Blk. 2, S.P.R.R. Sur. — Underreaming 10-in. csg. 1,800 ft.

Cranfill & Reynolds and others' No. 1 Bickley, 510 ft. N and 150 ft. E of SW cor. Sec. 50, Blk. 18, T.&P. Sur. — Drlg. 1,190 ft.

Cosden & Herbert Oil Co.'s No. 1 Bickley, 320 ft. N and 319 ft. E of SW cor. S half of NW Sec. 50, Blk. 18, T.&P. Sur. — Rig.

Cosden & Herbert Oil Co.'s No. 5 Bickley, 330 ft. S and 319 ft. W of NE cor. of S half of NW Sec. 50, Blk. 18, T.&P. Sur. — Drlg. 1,185 ft.

E. L. Evans' No. 1 S. W. King, Manuel Bueno Sur. No. 197 — Shut down 1,825 ft.

Eastland Oil Co. and White Eagle Oil Co.'s No. 1 Derrick, 200 ft. S and W of NW cor. Sec. 53, Blk. 18, T.&P.R.R. Sur. — Drlg. 2,610 ft.

McMan Oil & Gas Co.'s No. 1 Bickley, 2,320 ft. W and 1,650 ft. S of NE of Sec. 50, Blk. 18, T.&P. Sur. — Drlg. 2,085 ft.

McNeeley et al's, No. 1 Roscoe Bland, 1,175 ft. N and 240 ft. W of SE cor. Sub-Division 20, A-164, DeWitt Co. School Land — Rig.

Mook Texas Co.'s No. 1 Creight, 330 ft. S and E of NW cor. of E 100 ac., Scatlorn Sur. A-301 — Show oil 2,563-65 ft.; 1,200 ft. water 2,565-89 ft.; shut down 2,570 ft.

Phillips Pet. Corp.'s No. 6 J. R. Walling, 1,635 ft. E and 330 ft. S of NW cor. S half Sec. 19, Blk. 19, T.&P. — Drlg. 2,447 ft.

Phillips Pet. Co.'s No. 4 J. C. Mason, 993 ft. N and 330 ft. E of SW cor. W half NE Sec. 18, Blk. 19, T.&P. Sur. — Drlg. 2,745 ft.

Phillips Pet. Co.'s No. 1 R. E. Windham, 330 ft. N and W of SE Sec. 17, Blk. 19 — Drlg. 1,692 ft.

Richardson Bros.' No. 1 Mrs. M. A. Martin, C E 80 acres, N half Sec. 13, J. Weihl Sur. No. A-468 — Fishing 732 ft.

Roberts Oil Corp.'s No. 2 A. T. Smith, 330 ft. N and E of SW cor. 40-acre tract, Sec. 51, Blk. 18, T.&P. Sur. — Drlg. 2,365 ft.

Roberts Oil Corp.'s No. 3 A. T. Smith, 330 ft. N and W of SE cor. 40-acre tract Sec. 51, Blk. 18, T.&P. Sur. — Drlg. 2,060 ft.

Roeser & Pendleton's No. 1 Grayson-B, 330 ft. N and 288 ft. W of SE cor. of J. H. Grayson Sur. 3-A-1,771. — Drlg. 2,250 ft.

Sinclair Oil Co.'s No. 1 Buckley, 330 ft. S and 319 ft. E of NW N half NE Sec. 50, Blk. 18, T.&P. Sur. — Underreaming 8¼-in. casing 2,21[illegible] ft.

Sinclair O. & G. Co.'s No. 2 Buckley, 975 ft. S, 320 ft. E of NW cor. N half NE cor. Sec. 50, Blk. 18, T.&P. R.R. Sur. — Drlg. 1,080 ft.

Snowden & McSweeney's No. 2 Bickley, 330 ft. S and 959 ft. W of NE cor. of N half of NW Sec. 50, Blk. 18, T.&P. Sur. — Drlg. 2,090 ft.

Snowden & McSweeney's No. 3 Bickley, 970 ft. S and 319 ft. W of NE of N half of NW of Sec. 50, Blk. 18, T.&P.R.R. Sur. — Top pay 2,474 ft.; total depth 2,481 ft.; swabbing 75 bbls. per hour.

W. G. Stough et al's No. 1 J. P. Willis, J. C. Patterson Sur. No. 2 — Shut down 1,740 ft.

The Texas Company's No. 1 Camp, 330 ft. N and 990 ft. E of SW cor. 194.5-acre tract in Sec. 13, Blk. 19, T.&P.R.R. Sur. — Drlg. 1,400 ft.

The Texas Company's No. 2 Carter, 812 ft. N and 320 ft. E of SW of Laura Carter Sur., Sec. 13, Blk. 19, T.&P. Sur. — Drlg. 2,270 ft.

Woods & Williams' No. 1 M. A. Parr, about 500 ft. S and E of NW cor. G. A. Kirkland Sur. A-507 — Shut down 750 ft.

W. W. Zingery et al's No. 1 J. T. Thomas, 250 ft. S and 103 ft. W of extreme NE cor. Sec. 13, Blk. 19 — Location.

### KENT COUNTY

J. S. Cosden & Co.'s No. 1 Wallace, Sec. 56, Blk. 98, H.&T.C. Sur. — Drlg. 3,015 ft.

Phillips Pet. Co.'s No. 1 Sandell, 330 ft. N and E of SW cor. of SE of Sec. 429, Blk. D, H.&T.C. Sur. — Hole full water 3,320 ft.; set [illegible] in. casing 3,951 ft.; drlg. 4,1[illegible] ft.; hole full water 4,097 ft.

Pursley Ranch Dev. Co.'s No. 1 fee, 300 ft. E and 150 ft. N of SW cor. Sec. 8, Blk. H, H.&T.B. Sur. — Location.

### KNOX COUNTY

Deep Rock Oil Co.'s No. 1 Moore — Shut down 2,495 ft. for repairs.

Deep Rock Oil Co.'s No. 1 Big Four, 1,270 ft. S and 2,500 ft. W of NE cor. Sec. 21, Blk. 4 — Shut down 4,516 ft.; hole full [illegible] water.

### LOVING COUNTY

Lockhart & Co.'s No. 2 Allen, 330 ft. NW and 330 ft. NE Sec. 82, Blk. 33, H.&T.C. — Shut down 578 ft.; cem. 12½-[illegible] casing.

Lockhart & Co.'s No. 1-A Lepp, Sec. 85, Blk. 33 — Set 6-in. casing 3,950 ft.; oil sho[illegible] 4,095--4,135 ft.; 250,000 ft. g[illegible] cleaning out 4,178 ft.; 2,000,0[illegible] ft. gas 4,172-75 ft.; top bla[illegible] lime 4,095 ft.; shut down 4,2[illegible] ft.; flows 20 bbls. daily.

Lockhart et al's No. 1 Wheat & Ramsey, 1,650 ft. NW and 900 ft. SW Sec. 83, Blk. 1, W.&N.W.R.R. Sur. — T[illegible] salt 1,120 ft.; drlg. 3,3[illegible] ft., gyp and anhydrite.

### MENARD COUNTY

Carpenter & Robbins' No. 1 Kothman, NW cor. SW SW Sec. 22 — Shut down 600 ft.

J. C. Barnett and T. H. Drake's No. 1 Callan City Co. Ranch, Sec. 22 — Show oil 1,857 ft.

Panhandle O. & R. Co.'s No. 1 G. P. Eckardt, C SW Sec. 10, Blk. 2, TW.N.G.R.R. Sur. — Total depth 3,002 ft.; top [illegible] 3,001 ft.; 2,000 ft. fluid in ho[illegible] 1,100 ft.; shut down 3,018 ft.

Renfro et al's No. 1 J. Davis, C NW SW Sec. 79, Jacob Brecker Sur. — Shut down 950 ft.

Sorrels & Jackson's No. 1 F. Wilhelm, C NE Sec. 6, Blk. C, Brooks & Burleson Sur. — Shut down 290 ft.

### MIDLAND COUNTY

Shelton et al's No. 1 Kloh & Rumsey, 600 ft. N and E of SW cor. Sec. 13, Blk. 40, T-4-S, T.&P.R.R. Sur. — Top salt 1,800 ft.; drlg. 3,627 [illegible]

Shoup et al's No. 1 Roy Parks, C NW Sec. 34, Blk. 41, Twp. 2s, T.&P. — Top salt 1,700 ft.; cem. 8⅝-in. c[illegible] ing 2,770 ft.; show oil 3,330 [illegible] shut down 4,004 ft.

### MITCHELL COUNTY

E. P. Campbell et al's No. 1 Pond, 1,065 ft. W, 660 ft. N of SE cor. Sec. 79, Blk. 27, T.&P. Sur. — Drlg. 680 ft.

Hucony Gas Co.'s No. 1 C. Weichsel, 2,310 ft. N and 990 ft. E of SW cor. Sec. 78, Blk. 26, T.&P. Sur. — Top lime 1,342 ft.; shut do[illegible] 1,349 ft.

Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. — Drlg. 900 ft.

### NOLAN COUNTY

Herbert Oil Co.'s No. 1 Pepper, C of N half Sec. 32, Blk. 22, T.&P. Sur. — Show gas 3,160 ft.; hole full s[illegible] phur water 3,190-3,202 ft.; dr[illegible] 3,303 ft.

### PECOS COUNTY

Alexander & Lyle's No. 1 Myrtle Sellman, C SW SE Sec. 20, Blk. Z, T.C. Ry. Sur. — Top salt 814 ft.; top lime 1[illegible] ft.; 3,400,000 ft. gas from 1,0[illegible] 26 ft.; spraying very little [illegible] shut down.

George Anderson's No. 1 University, C Sec. 11, Blk. 17 — Top salt 1,030 ft.; shut down [illegible] 880 ft.

M. C. Dibble & Hale's No. 1 Bonebrake, Sec. 115, Blk. 8, H.&G.W. Sur., elev. 2,555 ft. — Top lime 1,305 ft.; drlg. up bu[illegible] 1,575 ft.

Ditto Oil Co.'s No. 1 J. M. Montgomery, Sec. 104, Blk. 331, A16,387 — Drlg. 600 ft.

A. T. Fletcher's No. 1 Winfield, 3,140 ft. N and 500 ft. E of SW cor. Sec .11, Blk. 132, T.&St.L.R.R. Sur. — Small show oil and gas 615 [illegible] top salt 1,740 ft.; drlg. 1,850 [illegible]

Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. — Shut down 1,005 ft.

McDonald et al's No. 1 A. A. Parsell, C NW SE Sec. 28, Blk. A, G.C.&S.F.R.R. Sur. — Shut down 100 ft.

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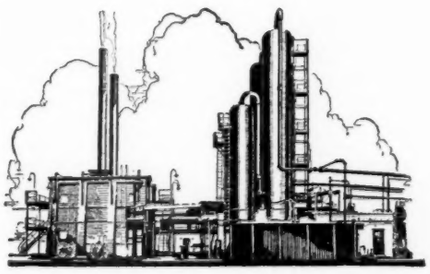

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Mid-Kansas Oil & Gas Co.'s No. 11 Yates-C, 250 ft. S and 845 ft. E of NW cor. Sec. 60, Blk. 1, I.&G.N. ..... Location.
Moncrief & Zoch et al's No. 1 Union Land, C Sec. 35, Blk. 12, H.&G.N.R.R. Sur. ..... Top salt 540 ft.; drlg. 772 ft.
Olcan Pet. Corp.'s No. 1 Harrell, Sec. 98, Blk. A-2, T.C.R.R. ..... Top salt 845 ft.; shut down 3,303 ft. for orders.

Pecos Valley Oil Co.'s No. 1 fee, Sec. 22, Blk. 16, H.&G.N. Sur. ..... Shut down 1,015 ft.
R. J. Spikes' No. 1 George Brown ..... Shut down 700 ft.
Rio Pecos Oil Co.'s No. 1 Yates, 330 ft. S and E of NW cor. Sec. 542, Blk. 1, H.&G.N. ..... Fishing 325 ft.
Roxana Pet. Corp.'s No. 3 Smith-D, 330 ft. S and E of NW cor. of S half of Sec. 24, Blk. 194, G.C.&S.F. Sur. .. Spudding.
Roxana Pet. Corp.'s No. 11 J. H. Tippett, 982 ft. N and 2,345 ft. W of SE cor. Sec. 102, Blk. 194, G.C.&S.F. R.R. ..... Set 6-in. casing 1,265 ft.; drlg. 1,325 ft.

Roxana Pet. Corp. and Kirby Pet. Co.'s No. 1 University, Sec. 23, Blk. 26 ..... Hole full sulphur water 1,400-50 ft.; shut down 3,070 ft.; 8-in. casing 3,065 ft.; drlg. 3,462 ft.; sulphur water 3,195 ft.; shut down 4,002 ft.

Schumaker et al's No 1 Williams et al, 330 ft. N of middle of S line, Sec. 1, Blk. 117, G.C.&S.F. ..... Spudded and shut down.
Southern C. O. P. Co.'s No. 1 Scharbauer Cattle Co., SW cor. Sec. 21, Blk. 124, T.&S.L. Sur. ..... Show gas 1,455-60 ft.; shut down.
Talbot & Dittman's No. 1 Unsicker, 1,320 ft. from E and 660 ft. from S lines, Sec. 25, Blk. 10, H.&G.N. ..... Location
Transcontinental Oil Co.'s No. 1 University, NE NW SW Sec. 18, Blk. 18 ..... Top lime 1,155 ft.; straightreaming 1,130 ft.

World Oil Co.'s No. 1 Kloh, Sec. 47, Blk. 45, Twp. 8, T.P.R.R. Sur., elev. 2,810 ft. ..... Shut down 3,105 ft.

**PRESIDIO COUNTY**

Eastland Oil Co.'s No. 1 Smith, Cen. Sec. 17, Certificate 463, or Blk. 351, G.C.&S.F.R.R. ..... Location.
Phillips Pet. Co., Empire G. & F. Co., Delmar Oil Co. and C. E. Miller's No. 1 Tootle Est., C NE Sec. 75, Blk. 3, D.&P.R.R. Sur. ..... Fishing 690 ft.
L. C. Brite's No. 1 Lee, Sec. 50, Blk. 12, G.H.&S.A. Sur., center of section ..... Shut down 2,500 ft., contract depth.

**REAGAN COUNTY**

Empire Gas & Fuel Co.'s No. 1 Sawyer Cattle Co.-A 4,160 ft. from S line and 330 ft. from W line of Sec. 18, Blk. A, Leonard G. Gee Sur. ..... Total depth 220 ft.; drlg. 760 ft.
Texon O. & L. Co.'s No. 1-B University Group 1 ..... Top pay 6,250 ft., hole full of oil; well made two small heads; drlg. 8,330 ft.

Skelly Oil Co.'s No. 3 University, 2,310 ft. N and E of SW cor. Sec. 33, Blk. 8, University Land ..... Drlg. 775 ft.

**REEVES COUNTY**

D. P. Davis et al's No. 1 H. C. McCart, 300 ft. S and 200 ft. W of NE cor. S half NW Sec. 26, Blk. C-18 ..... Shut down 25 ft.
Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,847 ft. ..... Total depth 2,900 ft.; shut down.
Dr. Kitsis et al's No. 1 Kloh & Rumsey, 330 ft. N and W of SE cor. Sec. 5, Blk. 54, Twp. 5, T.&P. Sur. ..... Shut down 70 ft.
David R. Thompson's No. 1 A. A. Eddins ..... Swedging csg. 5,658 ft.; pulling 5-in. csg.

World Oil Co.'s No. 1 A. L. Duff, 1,500 ft. from S. 850 ft. from NE. R. S. Johnson Sur. No. 68 ..... Elev. 2,774 ft.; total depth 4,515 ft.; plugged back 4,223 ft.; hole full fluid, slopping 1 bbl. of oil daily.

**RUNNELS COUNTY**

Agnew & Sons, Inc., No. 1 R. R. Russell in Mrs. H. Holbien Sur. No. 13½ ..... Show oil and gas 3,990 ft.; shut down.

Gibson & Johnson's N. 1 W. H. Rainwater, 660 ft. N and E of SW cor. of J. H. San Miguel Sur. (cor. location for No. 1 Harris) ..... Shut down 2,872 ft.; hole full sulphur water.

R. D. Hamilton et al's No. 1 A. Spill, 1,320 ft. S and W of NE cor. A. Spill 891 acres, out of Thomas R. Webb Sur. No. 358 ..... Shut down 100 ft.
Jones Oil Syndicate's No. 1 W. Dale, 212 ft. from N line, 150 ft. from W line Sec. 109, E.T.R.R. ..... Shut down 2,245 ft.
McLean et al's No. 1 G. W. Clayton, 150 ft. N line, 270 ft. from W line Sec. 135, E.T.R.R. ..... Shut down 1,185 ft.
Nourse & Tilton's No. 1 R. A. Cramer, 200 ft. S, 600 ft. E of NW cor. G.C.&S.F. Sur. No. 2 ..... Shut down 100 ft.
Kennedy et al's No. 1 J. E. Tally, 1,200 ft. from N line, 800 ft. from E line Sec. 534, V. V. McKenon ..... Shut down 3,007 ft.
R. B. Summers at al's No. 1 J. W. Reese, M. J. Parramore Sur. 26 ..... Shut down 1,650 ft.
Union Oil Co. of Nevada's No. 1 W. E. Allen, 1,000 ft. N and W of SE cor. Sec. 1, H.E.&W.T. Sur. ..... Drlg. 1,550 ft.
Vacuum Oil Co.'s No. 3 McMillan, 561 ft. E of No. 1 Domingo Diaz Sur. ..... Pay 2,512-13 ft.; flowed 330 bbls.

**SCHLEICHER COUNTY**

J. F. Long and O. C. Long's No. 1 W. H. Williams, NE cor. Sec. 28, H.E.&W.T.R.R. Sur. ..... Shut down 275 ft.

**SCURRY COUNTY**

Landreth Prod Co.'s No. 1 Hillmer, 330 ft. N and E of Sec. 75, Blk. 25, H.&T.C.R.R. Sur. ..... Top salt 870 ft.; drlg. 2,260 ft.
I. B. Mims et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C. Sur. ..... Spudded and shut down (corrected).

G. E. Dieckman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ..... Drlg. 350 ft.

**STERLING COUNTY**

F. & G. Oil Co.'s No. 1 W. L. Foster, C SE Sec. 20, Blk. 12, S.P.R.R. Sur. ..... Drlg. 890 ft.

**STONEWALL COUNTY**

Sun Oil Co.'s No. 1 Reynor, 346 ft. S and W NE cor. Sec. 20, Blk. B, H.&T. C. ..... Drlg. 2,680 ft.

**SUTTON COUNTY**

Phillips Pet. Co.'s No. 1 A. G. Holman, 2,310 ft. S and 330 ft. W NE cor. Sec. 25, C.C.S.D.&N.G.R.R. Sur. .... Drlg. 5,745 ft.
Phillips Pet. Co.'s No. 1 Cusanbary, 2,310 ft. E and 330 ft. S of NW cor. Sec. 39, C.C.S.D.&R.G.N.G. Sur. ..... Location.

**TAYLOR COUNTY**

Burnham et al's No. 1 A. M. Y. X. ..... Spudded and shut down.
Grisham-Hunter Oil Corp.'s No. 1 T. L. Stevens, 220 ft. S and E of NW cor. Sec. 53, Blk. 19, T.P. Sur. ..... Fishing bit 1,890 ft.
Hurley Oil Co.'s No. 1 Mrs. A. R. Payne, 330 ft. N and E of SW cor. E 80 acres of NW Sec. 52, Blk. 19 ..... Fighting cave 685 ft.

**TERRELL COUNTY**

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T.R.R. ..... Spudded and shut down.
Champlin Ref. Co.'s No. 1 Corder, C Sec. 110, Blk. 1, C.C.S.D. Sur. ..... Cem. crevice 3,535-40 ft.; total depth 3,552 ft.; cleaning out.

Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Blk. D-7, E.L.&R.R. Sur. ..... Shut down 1,749 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, Cen. Sec. 78, Blk. D-7, E.L.&R.R. Sur. ..... Location.
Milham Exploration Co.'s No. 1 Bassett, Sec. 76, Blk. Y, W. E. Robertson Sur. ..... Cem. 8⅝-in. casing 3,986 ft.; cem. cave 4,140 ft.

Woodley & Jones No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ..... Shut down 150 ft.

**TERRY COUNTY**

Kingsland O. & P. Co.'s No. 1 Brownfield, C NW SW SW Sec. 7, Blk. 1-A, E.L.R.R. Sur. ..... Shut down 4,430 ft.

**TOM GREEN COUNTY**

Collins et al's No. 1 Jones, CSL Sec. 646, Shaffer Sur. ..... Shut down 1,800 ft.
Fitzgerald & Taliaferro's No. 1 Bennett, C SW Sec. 1,628, E. H. Ringer ..... Shut down 1,920 ft.
F. P. Green et al's No. 1 fee, 575 ft. from N and 1,450 ft. from W lines Sec. 165, District 11, S.P.R.R. Co. Sur. ..... Shut down 1,066 ft.

McLaughlin & Ridge's No. 1 R. Q. Holder, 3,140 ft. N and 80 ft. W SE cor. J. P. Parker Sur. (3,000-ft. test) ..... Show gas 1,757-59 ft.; shut down 3,005 ft.; hole full water 2,986 ft.

Tinker et al's No. 1 D. J. Jones, 150 ft. N and 4,250 ft. W of SE cor. J. J. Schaefer Sur. 646 ..... Shut down 1,800 ft.
Tulsa Oil Co.'s No. 1 Adams, C SW Sec. 163, Blk. 11, S.P.R.R. Sur. ..... Shut down 1,050 ft.

**UPTON COUNTY**

Champlin Oil & Ref. Co.'s No. 4 J. F. Lane, 990 ft. from S. 330 fet. From W line of SE Sec. 2, G.C.&S.F. Sur. .. Drlg. 1,600 ft.
Gulf Prod. Co.'s No. 7 J. F. Lane, 990 ft. N and 326 ft. W of most southerly SE cor. of their 160-acre tract Sec. 3, G.C.&S.F. Sur. ..... Drlg. 1,245 ft.; top salt 475 ft.
Keck Investment Co.'s No. 1 H. L. McClintic, 330 ft. S and W NE cor. Sec. 206, Blk. F, C.C.S.D.&R.N.G. Sur. ..... Drlg. 1,095 ft.

**VAL VERDE COUNTY**

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... Drlg. 4,350 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev. 2,130 ft. ..... Gas sand 2,491-2,520 ft., tested 125,750 ft. gas; reset 8-in. 2,511 ft.; shut down 4,210 ft.

Producers Oil Co. et al's No. 1 Everett Bros., 2,310 ft. S and 330 ft. E of NW cor. Sec. 40, Blk. DB, C.C.S.D.RG.N.G. Sur. ..... Location.
W. B. Thraves et al's No. 1 W. E. Wilson, 6,830 ft. N NE cor. Sec. 1, T.&P., thence 1,680 ft. E Sec. 115, Blk. E, G.C.&S.F. ..... Show oil and gas 1,055 ft.; shut down 1,215 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE Sur. 47, Blk. Y ..... Set 15½-in. casing 767 ft.; drlg. 1,204 ft.

**WARD COUNTY**

Denver P. & R. Co.'s No. 1 Cherokee Land & Investment Co., 990 ft. from NEL and 2,310 ft. from SEL Sec. 215, Blk. 34, H.&T.C. Sur. (4,000-ft. test) ..... Set 8¼-in. casing 2,505 ft.; top salt 2,755 ft.; drlg. 4,255 ft.

E. B. Lovelace et al's No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 162, Blk. 34, H.&T.C.R.R. ..... Spudding and shut down.
Prairie Oil & Gas Co.'s No. 1 Sealy Estate, 1,320 ft. S and W Sec. 95, Blk. A, G.M.M.B.&A. Sur. ..... Top salt 1,073 ft.; 5,000,000 ft. gas 2,526 ft.; gas decreased to 2,000,000 ft. at total depth 2,647 ft.

Rector Oil Co.'s No. 1 Johnson, 1,150 ft. NW, 5,610 ft. NE, Sec. 10, Blk. 32, H.&T.C. ..... Top salt 745 ft.; show oil 1,195 total depth 2,085 ft.

Shipley et al's No. 1 Hazlett, 2,310 ft. NE and 2,310 ft. SE Sec. 17, Blk. 5, H.&T.C. ..... Top salt 727 ft.; cleaning out 2,210 ft.

Talbot, Dittman & Atlantic O. P. Co.'s No. 1 Dorr, 1,320 ft. from SE line and 660 ft. from SW line of Sec. 9, Blk. 5, H.&T.C. R. R. Sur. ..... Location.
Talbot et al's No. 1 Riddle, 330 ft. S and W of Sec. 90, Blk. 5, H.&T.C.R.R. Sur. ..... Rigging up.

**WINKLER COUNTY**

Atlantic O. P. Co. et al's No. 2 Daugherty, 2,310 ft. N and E of SW cor. Sec. 3, Blk. 74, Public School Land .. Drlg. 2,460 ft.
Atlantic O. P. Co.'s No. 1 Hendricks-H, 2,310 ft. N and 1,650 ft. W of SE cor. Sec. 30, Blk. B-5, School Land .. Top lime 2,785 ft.; set 8¼-in. casing 2,788 ft.; preparing to test 2,874 ft.; 2,000 ft. oil in hole; straightening crooked hole 2,914 ft.; to core to lime.

Amerada Pet Corp.'s No. 1 L. Daugherty, 2,310 ft. N and W of SE cor. Sec. 3, Blk. 74, Public School Land .. Drlg. 2,619 ft.
V. T. Bolin et al's No. 2 Brown, 2,000 ft. S and W of NE cor. Sec. 4, Blk. B-5, Public School Land ..... Rigged up rotary and shut down.
Barnsdall Oil Corp.'s No. 1 Tobe Morton, 330 ft. N and E of SW cor. Sec. 26, Blk. B-12 ..... Spudding; cem. 15½-in. casing 160 ft.; total depth 480 ft.

Barnsdall Oil Corp.'s No. 2 Tobe Morton, 1,650 ft. N and 330 ft. E of SW cor. Sec. 26, Blk. B-12 ..... Moving in material.
Cranfill & Reynolds' No. 1 Hendricks-F, 660 ft. S and 2,310 ft. E of NW cor. Sec. 16, Blk. 26 ..... Drlg. 2,260 ft., anhydrite; top salt 1,985 ft.

Cranfill Bros. & Pickrell's No. 1 Hutchins, 2,310 ft. N and 330 ft. E of SW cor. Sec. 47, Blk. 26 ..... Cem. 8¼-in. casing 2,285 ft.; top lime 2,280 ft.; 2,000,000 ft. gas 2,290 ft.; cem. 6⅝-in. casing 2,636 ft.; drlg. 2,720 ft.

Culberson Bros.' No. 1 Hendricks, 1,650 ft. N and W of SE cor. Sec. 40, Blk. B-5, School Land ..... Drlg. 615 ft.
Empire Gas & Fuel Co.'s No. 2 Daugherty, 330 ft. N and 2,310 ft. E of SW Sec. 3, Blk. 74 ..... Location.
Empire Gas & Fuel Co.'s No. 3 Daugherty, 330 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. 74 ..... Location.
Empire Gas & Fuel Co.'s No. 1-B Daugherty, 2,310 ft. S and 990 ft. W of NE cor. Sec. 3, Blk. 74 ..... Location.
Flandell & Co.'s No. 1 Carter, 640 ft. S, 330 ft. W Sec. 26, Blk. B-3. ..... Drlg. 350 ft.
Gulf Prod. Co.'s No. 1 O'Brien, NW cor. Sec. 31, Blk. F. Drlg. 1,356 ft.
Independent O. & G. Co.'s No. 3 McCabe, 990 ft. S and 2,310 ft. W of NE cor. Sec. 36, Blk. B-5, School Land .. Top salt 950 ft.; top lime 2,296 ft.; oil show 2,515 ft.; total depth 2,707 ft.

Magnolia Pet. Co.'s No. 1 Scarborough, 2,310 ft. S and 990 ft. E Sec. 1, Blk. C-22 ..... Drlg. 940 ft.
May Prod. Co.'s No. 1 Hendricks, 1,320 ft. N and 2,310 ft. W of SE Sec. 34, Blk. 26, Public School Land ..... Top lime 2,449 ft.; set 6⅝-in. casing 2,455 ft.; oil show 2,710 ft.; shut down 2,881 ft. for orders.

Prairie Oil & Gas Co.'s No. 1 E. W. Cowden, 2,310 ft. N and 339 ft. E of SW cor. Sec. 3, Blk. B-12 ..... Top lime 2,455 ft.; cementing 8¼-in. casing 2,475 ft.; rigging up standard tools.

Prairie Oil & Gas Co.'s No. 2 Cowden, 1,320 ft. N and 330 ft. E of SW cor. Sec. 3, Blk. B-12 ..... Drlg. 2,250 ft.
Prairie Oil & Gas Co.'s No. 3 Cowden, 2,200 ft. N and 990 ft. E of SW cor. Sec. 3, Blk. B-12 ..... Location.
Prairie Oil & Gas Co.'s No. 1 Leck, 330 ft. S and 2,310 ft. E of NW cor. Sec. 16, Blk. 74 ..... Location.
Prairie Oil & Gas Co.'s No. 1 Martin, 330 ft. N and 1,650 ft. W of SW cor. Sec. 27, Blk. B-12 ..... Location.
Roxana Pet. Co.'s No. 1 Daugherty, 2,310 ft. S and W of NE cor. Sec. 3, Blk. 74 ..... Location.
Simms Oil Co.'s No. 1 Geo. Sealey, 2,434 ft. S and 330 ft. W of NE cor. Sec. 50, Blk. F ..... Location.
Southern C. O. P. Co.'s No. 3 Hendricks T-67-2-D, 1,650 ft. S and 330 ft. W of Sec. 28, Blk. 26 ..... Cem. 12½-in. casing 468 ft.; drlg. 2,557 ft.

Southern C. O. P. Co.'s No. 3 Hendricks T-88-T, Sec. 34 Blk. 26, Public School Land ..... Top lime 2,452 ft.; set 8-in. casing 2,473 ft.; cem. crevice 2,939 ft.

Southern C. O. P. Co.'s No. 1 Hendricks T-88-D, 2,310 ft. N and 330 ft. W of SE cor. Sec. 4, Blk. B-12, Public School Land ..... Topped lime 2,486 ft.; cementing 8¼-in. casing 2,495 ft.; drlg. 2,540 ft.

Southern C. O. P. Co.'s No. 2 Hendricks T-88-R, 1,320 ft. N and 330 ft. E of SW cor. Sec. 27, Blk. 26 ..... Top lime 2,300 ft.; cem. 2,320 ft.; rigging up standard tools.

Southern Crude Oil Co.'s No. 1 Hendricks, T-88-Q, 440 ft. N and 330 ft. E of SW cor. of N½ Sec. 27, Blk. 26 .. Location.
Southern C. O. P. Co.'s No. 3 Hendricks T-89-C, 2,310 ft. N and W of SE cor. Sec. 35, Blk. B-5 ..... Location.
Southern C. O. P. Co.'s No. 3 Hendricks T-90, 2,210 ft. N and 330 ft. W SE cor. Sec. 47, Blk. 26 ..... Top lime 2,329 ft.; total depth 2,778 ft.; set 6⅝-in. casing 2,751 ft.; top pay 2,795 ft.; drlg. 2,963 ft.; est. 200 bbls. daily.

Simms Oil Co.'s No. 1 Geo. Sealey, 2,434 ft. S and 330 ft. W of SE cor. Sec. 27, Blk. B-12 ..... Location.

# Increasing Work in Eastern Fields

## Week Barren of Good Producers, But Fewer Districts Without Operations Already Under Way or Starting

By D. S. Wakenight
*Staff Correspondent, Eastern Fields*

PITTSBURGH, Pa., Oct. 29. — The week of development work in the eastern fields was featureless so far as completion of large wells was concerned. In the entire area there was not completed as good as a 50-bbl. producer. The volume of new production from all sections was as small or smaller as for any preceding week since the first of the year. Despite this poor showing there is an increased amount of new work starting, distributed throughout the old districts. There are now fewer districts that report no work under way and starting. In some sections in which there has not been a drilling well for many months a little new work is starting. Much of this kind of work is of a test nature, located in defined territory.

Operators do not feel inclined to go far afield in search of new producing territory. A good well in some defined district fails to attract attention for fear that the next efforts will result in very light pumpers or dry holes. Cleaning out, drilling deeper and shooting old wells is still a feature in nearly all of the old fields.

The deep sand territory in southeast Ohio fell by the wayside, completing but two fair producers. In Section 1, Perry Township, Licking County, Kuntz & Hulse got a 35-bbl. producer when they drilled No. 4 on the James Chaney farm through the Clinton sand. In Section 11, Washington Township, Hocking County, the Graystone Oil Co. got a 30-bbl. producer when it completed and shot in the same formation No. 5 on the George Miller heirs' farm.

### Two Fair Gassers

In the Fisher Pool, Lot 67, Athens Township, Athens County, Gross and others got a gasser good for 3,000,000 feet when they drilled No. 6 on the B. Irwin farm into the Berea grit. In Section 13, Muskingum Township, Muskingum County, J. T. Bebout and others got a Clinton sand gasser good for 2,000,000 feet, at a test on the Luella Shaw farm.

On Indian Run Bethel Township, Monroe County, F. O. Parks and others completed a second test on the Lena Nieb farm good for 10 bbls. a day in the Germantown sand.

In the NW Section 14, Richland Township, Holmes County, the East Ohio Gas Co.'s test on the G. O. Leadbetter farm is a gasser in the Clinton sand good for 3,000,000 feet.

In Section 24, Bedford Township, Meigs County, the Ohio Fuel Supply Co. has a light gasser at a test on the Herbert Barnhart farm. In Section 19, Sutton Township, the Pure Oil Co.'s No. 4 on the Kinder heirs' farm is a 4-bbl. pumper in the Berea grit.

On Good Hope Ridge, Section 75, Salem Township, Washington County, Meister & Blair have completed in the Maxon sand a second test on the Meister-Blair farm. It is a 10-bbl. pumper in the formation named. On Pegg Run, Section 5, Newport Township, W. C. Noland has completed in the first Cow Run sand No. 6 on his own farm. It is a duster. In Section 19, Lawrence Township, Washington County, the Peoples Banking & Trust Co. drilled down to the Big Injun sand the Torner Oil Co.'s No. 61 on the William Reader farm. It is dry in the Big Injun sand and will again be put to pumping in the second Cow Run sand.

### Licking County

In Section 1, Perry Township, Licking County, Kuntz & Hulse have completed and shot in the Clinton sand No. 4 on the James Chaney farm. It produced 35 bbls. the first 24 hours. In Section 2, same township, M. F. Whitehill completed and shot in the Berea grit No. 4 on the Alice Ashcraft farm. It produced 20 bbls. the first 24 hours. It is a creditable producer for that formation.

In the NE Section 10, Jackson Township, Noble County, Levi Hall & Co. completed in the Berea grit No. 7 on the C. F. Misel farm, having developed only a light showing of oil. In Sutton Township, Section 12, Meigs County, the Twenty-Five Association, Inc., has a duster in the Cow Run sand at a second test on the James E. Stober farm. In the same township, R. A. Lyree and others have started to drill a test on the Stanley S. Holster farm. In the same township, Joseph McGhee and others have started to drill on the A. E. Carnahan farm.

### Very Shallow Producer in Athens

One mile north of Amesville, Section 33, Berne Township, Athens County, I. N. Thomas has drilled his No. 4 on the E. C. Curtis farm into the Peeker sand. It is showing for a 4-bbl. pumper at a total depth of 116 feet.

In the SW of Lot 2, Liverpool Township, Lorain County, the Preston Oil Co. has completed in the Clinton sand a test on the W. E. Shafer farm. It is showing for a 5-bbl. pumper. In Lawrence Township, Washington County, Shay, McMullin & Co. have started to drill a test on the A. D. Smith farm.

In Section 3, Knox Township, Vinton County, the Co-operative Oil Co. has a 5-bbl. pumper in the Berea grit at No. 6 on the William Beckley farm. In Brown Township, the Athey Drilling Co. is drilling on the George Drayer farm.

In the NW Section 10, Fallsbury Township, Licking County, the Preston Oil Co. completed and shot in the Clinton sand a test on the H. E. Morris farm. It is good for 15 bbls. a day. In the SE Section 30, Coal Township, Perry County the Buckstone Oil Co. has completed and shot No. 8 on the John C. Wion farm. It may possibly make a very light pumper in the same formation.

### Carroll and Medina Counties

In the SW Section 35, Lnoden Township, Carroll County, the Miller Lees Oil & Gas Co. has a 7-bbl. pumper in the Berea grit at No. 12 on the Tony & Karal Miskey farm. In Lot 6, Chatham Township, Lorain County, the O. K. Oil & Gas Co. has completed No. 17 on the T. W. Brinkner farm. It is so light as to scarcely miss the duster list.

In the SW Section 12, Sutton Township, Meigs County, the Twenty-Five Association, Inc., has started to drill a second test on the James E. Stobert farm. In Bedford Township, the Logan Gas Co. is drilling a test on the A. Warner farm.

In Section 13, Perry Township, Licking County, the Preston Oil Co. has an 8-bbl. pumper in the Berea grit at No. 7 on the James C. Wright farm.

In the NW Section 7, Enoch Township, Noble County, J. H. Yerain and others have completed a test on the Lawrence Crum farm. It is producing about 4 bbls. of oil and five times as much salt water. In Section 31, Deerfield Township, Perry County, Ralston & Maynard have completed No. 16 on the J. J. McCarty farm. It is good for 10 bbls. a day in the Berea grit.

In Lot 14, Cambridge Township, Guernsey County, E. Soules and others are due in the sand at No. 1 on the Martin Tittle farm. In the same township, John McCarton & Co. are fishing at 3,369 feet on the C. O. Watson farm.

### West Virginia

On Big Island Run, Clay district, Wirt County, the Liberty Supply Co. has completed No. 12 on the L. J. Becker farm. It is good for not more than 2 bbls. a day in the Mitchell sand. In the same district, the Smith Oil Co. has completed in the Big Injun sand No. 6 on the Smith Oil Co.'s farm. It is a small gas well.

In Center district, Calhoun County, the Gerwig-Knothe Oil & Gas Co. has a gasser in the Big Injun sand on the A. Hardman, Jr., farm, good for 1,000,000 feet. This location is on the Kanawha River. On the same stream and same district, the Hope Construction & Refining Co. has completed in the same formation No. 5 on the A. Hardman farm, good for 300,000 feet. The Calhoun Oil & Gas Co. has a duster in the Big Injun sand at a test on the Lula Meadows farm.

In Elizaberg district, Wirt County, A. C. Adair has completed in the second Cow Run sand No. 3 on the Carrie Rathbone farm. It is a very light pumper. In Freemans Creek district, Lewis County, Moran Brothers have a Fifth sand gasser at a test on the Kenney heirs' farm.

In Carroll district, Lincoln County, T. H. Lockwood has a gasser in the Berea grit at a test on the W. R. White farm. In Duval district, the United Fuel Gas Co. has started to drill on the W. E. Hilbert farm.

On Arnolds Creek, Central district, Doddridge County, Charles Pigott and others have completed a test on the J. R. Hiley farm. It is showing for a 10-bbl. pumper in the Gordon sand.

### Cleaning Out Helps Production

On Willow Island Run, McKim district, Pleasants County, the South Penn Oil Co. has cleaned out No. 13 on the F. M. Reynolds farm, increasing its production from 1 to 4 bbls. a day.

On Old Fork branch of Kemmie Creek, Lincoln district, Wayne County, the Public Gas Corp. has completed and shot No. 3 on the Thomas Caldwell farm. It got no oil but has a gas pressure good for 500,000 feet, at a total depth of 3,070 feet.

In Grant district, Ritchie County, Smith & Bickle have a 4-bbl. pumper in the Berea grit at a test on the Irwin Dotson farm. In Murphy district, Park Bowser's No. 3 on the J. W. Grim farm, is a 5-bbl. pumper. In Clay district, Bachelor & Co. have a 5-bbl. pumper at No. 3 on the Edward Pierpoint farm.

In Clay district, Wood County, the Henderson Oil Co. has a duster at No. 32 on the Caroline Wharton farm. In Church district, Wetzel County, the Manufacturers Light & Heat Co. has drilled deeper an old test on the J. M. Himelrick farm. It has a light show of oil and gas.

### Calhoun County

In Sheridan district, Calhoun County, Godfrey L. Cabot's No. 4 on the W. S. Ferrell farm is a gasser in the Big In-

(Continued on Page 88)

## WELL IN NEW DAVIESS COUNTY AREA EXPECTED TO START DEVELOPMENT

By Whit
*Staff Correspondent, Kentucky-Tennessee*

OWENSBORO, Ky., Oct. 29.—Rains over the western Kentucky fields heartened operators as they had been under serious handicap for the past 10 weeks. Water was extremely scarce and quite a few were required to drill water wells which tided them over temporarily. Others hauled water for long distances, while some of the larger companies laid pipes for 2 to 6 miles for water supply. Roads were running heavy with water and ditches in every direction were beginning to fill late Monday afternoon, men coming in from the field Monday night reported. Though the rain was helping in the field for boilers and other ways it was giving operators some trouble because of the hilly and rutted roads in the Ohio County area. The supply of water will be an incentive for more active development and the western division should show a great number of new completions, especially in Ohio and Daviess Counties, where the present rush is on.

One of the outstanding features of the field since the last review is the development of the oil well on the Emmett Burton farm just north of the road running from Owensboro to Hartford, a mile east of the Sugar Grove Church, in Daviess County, which caused leases on lands in that vicinity to jump in price rapidly. Ben Medley, it is reported, paid $2,500 for a 100-acre tract of I. B. Bryant, two farms south of the Burton farm, and James C. Ellis was reported to have paid $5 an acre for the 89 acres of S. H. Eastin, somewhat closer than the Bryant farm. A 16-acre farm just across the road from the Burton farm, which had not been noticed until the well came in, sold at $10 an acre. The land was not worth much more, surface and all. Farms that had been leased some time ago at 25 cents an acre rapidly popped up to from $5 to $25 an acre all around the Burton farm. Development is expected rapidly in that section, as the Burton well has turned out to be an excellent well.

### Building Pipe Line

According to the Owensboro Messenger, rapid progress is being made by the Producers Pipe Line Co. on the extension of its gathering lines 10 miles into the Red Hill section of Daviess County, and the manager expects to be running oil from the Red Hill area within a short time. The Illinois Pipe Line Co. is also extending its gathering system through the field as rapidly as new production is found.

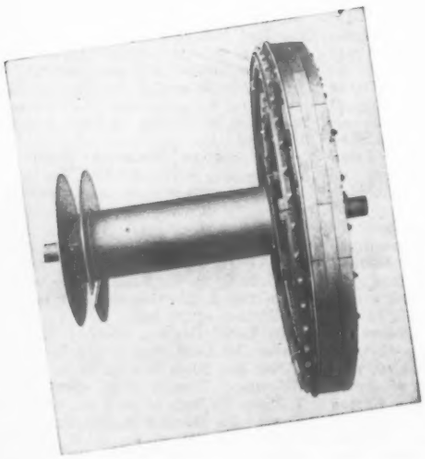
### Eastern Kentucky Wells

A number of completions are reported from the eastern part of Kentucky, but the wells at their best are very small producers. In Wayne County, District 3, Bell and Back have a dry hole in No. 17 on the Alford Cooper farm. In District 5, J. C. Blair and others' No. 9 on the J. F. Gregory had an initial production of 10 bbls.

In Estill County, District 7, the Superior Oil Corp. has a dry hole in No. 11 on the Pleas Tipton farm, and McEldowney, Bowser and others' No. 3 William Tackett is good for less than a barrel. In District 8, the Superior Oil Corp.'s No. 20 on the A. F. West and others farm, and No. 15 on the W. P. Wise, are good for 1 bbl. each, while its No. 24 T. W. Tyree and No. 9 Henry

(Continued on Page 82)

# Use the Moore



*Standard Specifications*

Wheel diameter, 7′ 6″; shoulder to shoulder length, 6′ 3″; shafts of 16″ or 18″ diameter with ½″ wall; trunnions, 5″ diameter x 6″; 9″ or 12″ brake face. The standard wheel includes three spooling flanges. Heavier shafts on request.

# CALF WHEEL

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## Long Life

THE strength of the Moore Steel Calf Wheel is due to several noteworthy features. It has an extra heavy steel pipe shaft which is heated and shrunk on the spoke type gudgeons and riveted in place. For maximum power, the channel steel spokes are bolted tangent to the shaft by sturdy wing plates. The brake wheel rim is of rolled steel plate segments with wood-en cants. The sprocket rim is bolted to the inside rim which extends ½" above the brake cants to prevent interference between the brake band and sprocket chain.

The Moore Steel Calf Wheel conforms in all respects to A. P. I. dimensional standards.

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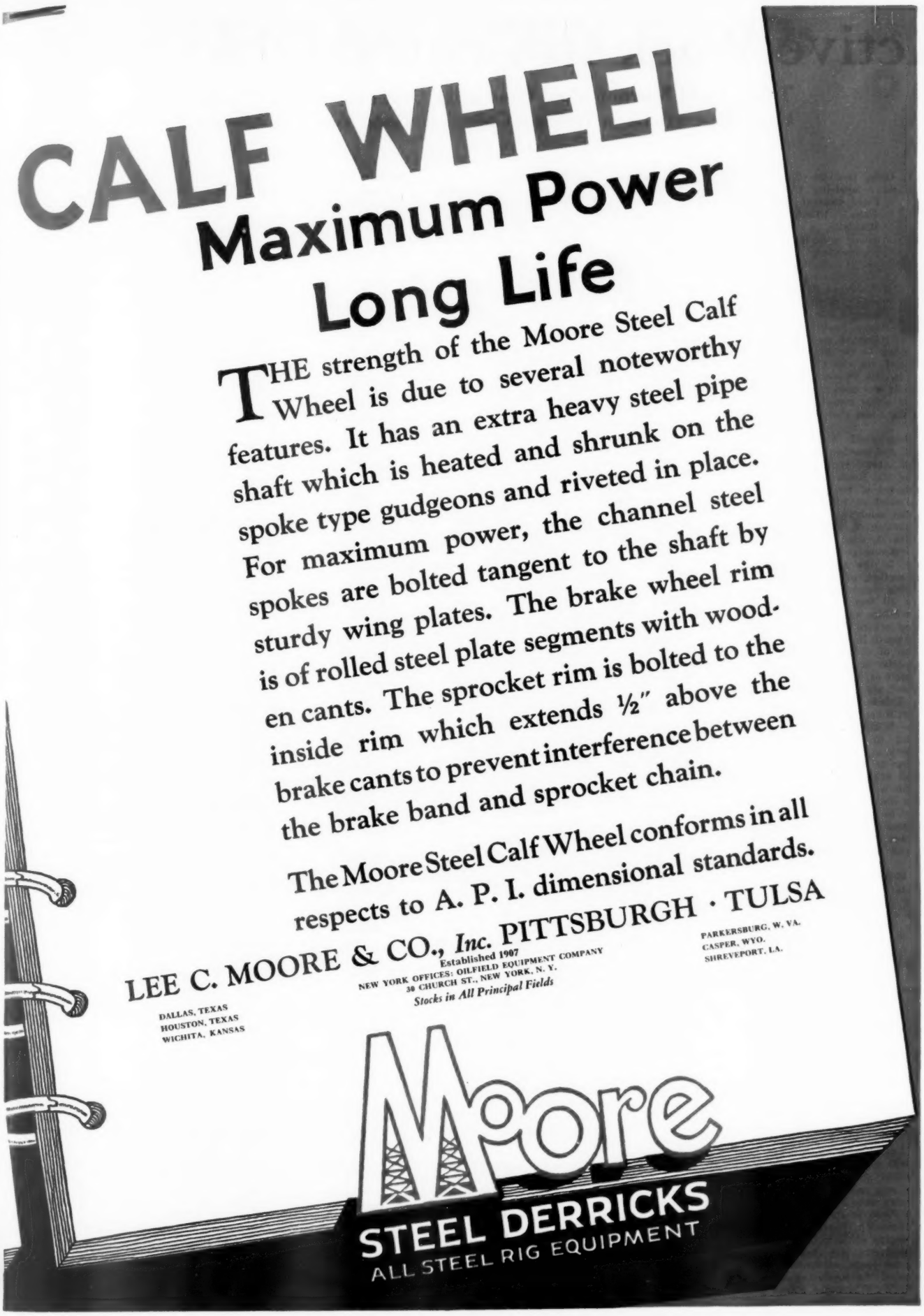


# Active Week in Central Ohio Fields

## Tiffin Field Murphy Pool Gradually Dropping Off in Production. Operations in Indiana Counties. Good Wells in Allendale

By Whit

*Staff Correspondent, Central West Fields*

FINDLAY, Ohio, Oct. 29—The Central West Field comprising the Lima Field, Central Ohio, Indiana, Illinois and Michigan, have the usual number of new completions, the larger wells being found in the Wolverine State, in Muskegon County. The week shows a new gusher for that field with an initial production of more than 700 bbls. in 24 hours, on the Figge land, operated by the Lima Oil Corp., the oil being found in the Traverse formation. Central Ohio is the most actively developed area and a few completions are reported from the Lima Field, Indiana and and Illinois.

In the Lima Field, Bath Township, Allen County, and northeast of Lima, H. F. Kelly and others' test in the northeast corner of the Reuben Theet, in the southeast quarter of Section 12, topped the Trenton sand at 1,322 feet and at 44 feet in the sand the well showed a natural production of 25 bbls. the first 24 hours. Ira B. Post and others' No. 8 in the northwest corner of the William Lenney, in the northwest quarter of the same section, pumped 25 bbls. initial, sand being topped at 1,314 feet and oil found at 49 feet in the sand. In Amanda Township, same county, W. B. Evenbeck and others' No. 3 well, 1,000 feet from the south line and 200 feet from the west line of the A. Keith, in the southwest quarter of Section 6, found the top of the sand at 1,191 feet and at 52 feet in the sand, pumped 15 bbls. initial.

South of Toledo, in Troy Township, Wood County, Russell M. Bell and others' No. 3 on the William Roechen farm, in the southeast quarter of Section 1, pumped 10 bbls. at a total depth of 1,292 feet, or 44 feet in the sand. George W. Huffman and others' second test, 1,065 feet from the north line and 660 feet from the east line of the Mary Reitzel, in the southwest quarter of Section 23, Perrysburg Township, pumped 6 bbls. the first 24 hours. Sand was topped at 1,251 feet and drilled 75 feet into the sand.

### Hancock County

No completions were reported from the Findlay end of the field, in Hancock County, but a number of old-time producing wells were pulled out and abandoned. In Liberty Township, of this county, the Ohio Oil Co. abandoned No. 2 J. G. Grubb, Section 2; Nos. 3 and 10 Mary A. Grubb, same section; No. 12 William Cusac, Section 5; and Nos. 1, 3, 9, 13, 15, 18 and 19 on the Carey C. Harris, Section 8. In the same township, L. Cramer is drilling a test on the Robert Codner, Section 31. In Biglick Township, same county, Robert Mitchell, Trustee, is drilling a second test on the Alva Beard farm, Section 16. In Portage Township, the Ohio Oil Co. abandoned old No. 6 on the R. A. Cooper, Section 32.

In the Forest Field, of Jackson Township, Hardin County, the Leonard Oil & Gas Co.'s test on the Alonzo T. Price, Section 18, is reported as showing a volume of 135,000 feet of gas. A showing of oil was found at a shallow depth in this test but was cased off as gas was what the owners were looking for.

The Tiffin Field, in the Murphy Pool, of Liberty Township, Seneca County, is gradually dropping off in production and very few producers are being found, mostly being dry holes, accounted for by trying to extend the producing area of the pool. W. W. White and others' No. 1 well, 600 feet from the north line and 250 feet from the west line of the George Fredericks farm, in the northwest quarter of Section 26, Liberty Township, and west of the Murphy Pool, proved a rank duster. Sand was found at 1,408 feet and was drilled 177 feet into the sand to a total depth of 1,585 feet.

### Central Ohio

Another active week of development work comes from the Central Ohio and adjacent areas, only one of the wells being above the average oil producer, which was the Pure Oil Co.'s second test on the C. B. Anderson, Section 24, Pike Township, Coshocton County, with an initial production of 108 bbls. from a sand at 3,019-65 feet and shot. This company made a location for a test on the H. H. Mohler farm, Clark Township, same county. The Ohio Oil Co. also made a location for a test on the Robert Rhode, Section 8, same township. In Monroe Township, same county, the Ohio Fuel Gas Co. is drilling No. 9-3266 on the Peter Shellhorn, Section 9.

In Ashland County, Vermillion Township, the Kemrow Co.'s test on the Marion Glass, Section 23, is an average gas producer. H. Church is drilling a second test on the Jackson Baker, Section 31. I. D. Hendershot is drilling a test on the J. S. Moffitt, Section 30, and the Ohio Fuel Gas Co. is drilling No. 1-3,200 on the S. L. Helbert, Section 14. In Orange Township, the Logan Gas Co. drilled a dry hole, in fact found no sand whatever in No. 1-3,017 on the Emery Bowman, Section 1. The Kemrow Co. is drilling No. 2 on the John T. Fluke, Section 15, and had a rig being set up for No. 2 on the John T. Fluke, Section 14. In Hanover Township, the Ohio Fuel Gas Co. is drilling No. 1-3,303 on the R. P. Hazlet, Section 29, and staked a location for No. 2-3,344 on the Albert Fritz, Section 12, same township.

In Medina County, Hinckley Township, the Ohio Fuel Gas Co. has a light gas well in No. 2-3,236 on the Ray M. Hurd, Lot 44. In Lafayette Township, the same company has a gas well with a very good showing in No. 3-3,192 on the J. C. Lincoln, Section 6.

In Lorain County, Carlysle Township, the Pittsfield Oil & Gas Co. is drilling a test on the John Malet, Lot 19, and Daugherty and others' are also drilling a test on the Marie Schummelman, same lot.

### Wayne County

In Wayne County, Chester Township, Harmon & George are drilling No. 2 on the K. W. Taylor, Section 5. In Congress Township, the Ohio Fuel Gas Co. is drilling No. 2-3,319 on the A. J. Ruse, Section 8. In Wayne Township the same company is cleaning out No. 1-1,258 on the B. E. Boreman, Section 6.

In Holmes County, Hardy Township, the East Ohio Gas Co. made a location for No. 7 on the L. A. Sowash, Lot 30. In Paint Township, the Ohio Fuel Gas Co. is drilling No. 1-3,329 on the David Kurtz, Lot 33. The Pure Oil Co. is drilling No. 4 on the Isaac F. Snyder, Section 18. Prairie Township, and in Knox Township, I. E. O'Hail is drilling No. 3 P. M. Young, Section 16.

In Richland County, Monroe Township, the Ohio Fuel Gas Co. is drilling No. 2-3,209 on the S. M. Douglas, Section 33.

In Knox County, Jackson Township, the Logan Gas Co.'s No. 1-3,015 on the A. J. Beatty, Section 1, produced an initial of 114 bbls. at a depth of from 3,067-3,120 feet. Arkansas Fuel Oil Co. made a location for No. 5 on the Frank Rinehart, Section 22. Ohio Fuel Gas Co. is drilling No. 2-3,328 on the George P. Keppert, Section 4, Brown Township. Same company staked a location for No. 2-3,333 on the James A. Greer, Section 9.

In Summitt County, Franklin Township, F. A. Brendall and others made a nice gas strike at a test on the C. L. Wilcox, Section 26, and struck a duster at a second test on the Thomas Bosh, Section 28.

In Licking County, Fallsbury Township, Brown and others' No. 8 on the Chapin, Section 10, is an 8-bbl. pumper from the shallow sand at from 748-58 feet. Whittmer Oil & Gas Properties is drilling deeper No. 1 on the Helen Kidwell Section 24, and the Preston Oil Co. made a location for a test on the N. E. Norris, Section 10. In Perry Township, the Whitehill Gas Co.'s No. 4 on the Albert Ashcraft, Section 2, is reported good for 15 bbls. at 671-82 feet. H. C. Farmer is drilling a test on the H. H. Hoover, Section 7. H. C. Farmer's No. 4 on the Burton Case, Sections 2 and 14, Granville Township, was dry in the sand from 746-56 feet. In Hanover Township, the Everett Gas Co.'s second test on the William Shipley, Section 20, was dry in a sand from 2,948-3,039 feet. The Wehrle Gas Co. is drilling a test on the Merl Dodson, Section 32, same township.

### Muskingum Operations

In Muskingum County, Jackson Township, Lantz & Meade, struck a light gas well in No. 3 on the Roy Baughman, Section 16, and is drilling No. 4 same farm, while No. 2 is a rig up on the same lease. The Pure Oil Co. is drilling No. 4 George W. Crawford, Section 5, and the Hope Construction & Refining Co. is drilling Nos. 2 and 3 on the W. E. Helphrey, Section 6. In Muskingum Township, the Mid-East Oil Co. found a nice gas pay at a second test on the L. M. Shaw, Section 13. The sand was topped at 2,328 feet and drilled 46 feet in to a total depth of 3,374 feet. In Falls Township, William Kline and others' test on the Fred A. Rehl, in the fourth-quarter section, is showing for 1,000,000 feet at from 3,450-92 feet. In Hopewell Township, the Heisey Gas Co. made a location for a second test on the S. L. Burrier, Section 5. The Hope Construction & Refining Co. made locations for No. 1 Reason Bolin, Section 11, and No. 1 S. L. Burrier, Section 1.

In Athens County, Ames Township, the Ohio Fuel Gas Co.'s No. 4-3,291 on the J. E. Gifford, Section 3, is a light gas well in the second Berea sand at from 1,321-43 feet. Same company is drilling No. 2-3,259 on the J. M. McDaniel, Section 7. In Carthage Township, the Logan Gas Co. is drilling No. 3-3,043 on the O. B. Chapman, Section 26, and the Ohio Fuel Gas Co. is drilling No. 1-3,228 on the Arthur A. Cole, Section 4. In Cannan Township, Fox & Mosures' No. 3 is an average gas well in the first Berea sand at from 1,263-71 feet, and No. 4, same farm, is reported showing an initial of 6 bbls. from the first Cow Run sand at from 97-129 feet, being very shallow. In Berne Township, Frank Selby's No .2 on the Lorenzo Lovell, Section 24, was dry. Second Berea sand in this well was topped at 1,374 feet and bottom of sand at 1,396 feet and sent down to a total depth of 1,400 feet. Frank Selby is drilling No, 15 on his own farm, Section 30. The Ohio Fuel Gas Co. is drilling No. 2-3,244 on the E. C. Glass, Section 30, same township.

In Meigs County, Sutton Township, Oscar O'Connell's test on the Frank E. Holmes, Section 36, shows around 200,000 feet of gas and 3 bbls. of oil from the first Berea sand at from 1,690½-1,708½ feet. Tyree and others' No. 4 H. D. Carnahan, Section 11, was a dry hole in the second Cow Run sand at from 672½-700½ feet. Same parties made a location for a second test on the Joseph Stobart, Section 12. The Pure Oil Co. made a location for a second test on the J. F. and A. B. Ham, Section 20. The Ohio Fuel Gas Co. is drilling deeper its No. 4-2,460 on the State of Ohio land. In Bedford Township, the Logan Gas Co. is drilling No. 2-3,207 on the A. Warner Section 6.

In Jackson County, Franklin Township, the Ohio Fuel Gas Co. is drilling No. 1-3,313 on the W. S. McClure, Section 28, and made a location for No. 2-3,331 on the J. E. Hines, Section 2. In Coal Township, same company is drilling No. 1-3,279 on the William Deckard, Section 35, and made a location for No. 3-3,335 on the C. W. Haslet.

### Stark County

In Stark County, Lawrence Township, the Cashdollar Co. drilled in a light gas well at a test on the George Seifert, Section 4, at a depth of 3,941 feet.

In Gallia County, Addison Township, the Ohio Fuel Gas Co. drilled an average gas producer in No. 1-3,231 on the H. F. Smith, Section 21, and the Atha Drilling Co.'s No. 1 on the Alex Lane, proved to be an average gas well. The Ohio Fuel well got its gas in the second Berea sand at from 1,837½-67½ feet and went to a total depth of 1,870 feet.

In Tuscarawas County, Clay Township, H. R. P. Miller's test on the Albert A. Wohlwend, Lot 26, was a duster. Top of lime in this well was found at 3,152 feet and only a slight showing of gas was found at from 3,321-27 feet.

In Guernsey County, Cambridge Township, the Hopewell Oil & Gas Co.'s No. 3 R. G. Simmons, Lot 13, is credited with an initial production of 18 bbls. Top of lime in this hole was found at 3,250 feet; top of lime sand at 3,368 feet and bottom at 3,380 feet. In Valley Township, the Ohio Fuel Gas Co. is drilling No. 1-3,324 on the J. W. Keller, administrator, in Lot 24. In Wheeling Township, the Blackstone Interest is drilling a second test on the John Rallston heirs, Section 11. In Westland Township, the Kemrow Co. is drilling No. 2 on the Paul and Julia Kochersha, Lot 8.

In Morgan County, few completions were recorded but quite a few wells are under way. In Penn Township, the Ohio Fuel Gas Co. has a light gasser in No. 1-3,281 on the John E. Benjamine, from the second Berea sand at from 1,402-22 feet and sent to a total depth of 1,428 feet. Bauman and others also got a light gas well on the J. P. and C. E. Hileman, Section 14, in the same sand from 1,501-27 feet, total depth 1,531 feet. Sutton Brothers are drilling deeper their No. 1 on the Charles S. Williams, Section 2. In Marion Township, Bauman and others are drilling No. 7 Florence Shuster Section 18. The Kemrow Co. is drilling No. 3 Charles Huffman, Section 29. Ohio Fuel Gas Co. is driling No. 3-3,234 on the C. D. Dugan, Section 24, and Hollowell and others made a location for No. 5 on the Rettie Syphers, Section 18.

In Muskingum Township, Muskingum County, the Mid-East Oil Co.'s No. 2 on the Luella M. Shaw farm, Section 13, is reported showing for 2,000,000 feet of gas, with the top of the sand at 3,328 feet and drilled 46 feet in to a total depth of 3,374 feet.

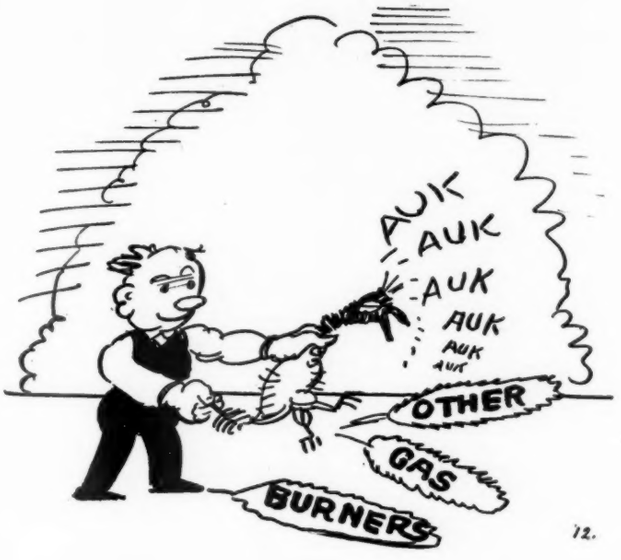
In Perry Township, Licking County, the Preston Oil Co.'s No. 7 on the James Wright, Section 16, is reported good for 8 bbls.

### Indiana

The test of the Mich-Ohio Oil Co. on the Bennett Taylor 160 acres in the southwest quarter of Section 17, Salem Town-

(Continued on Page 87)

# IT HAS BEEN SAID:

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# MEN KNOWN IN OILDOM

**W. L. Connelly**

W. L. Connelly, vice president of the Sinclair Consolidated Oil Company, who has recently been placed in charge of all foreign oil production and development work for his concern, is probably one of the best known executives in the industry. After 30 years of active participation in the oil business, Mr. Connelly has a host of friends reaching from the Pacific Coast across to the Atlantic and down to Tampico.

Mr. Connelly has been identified with the Sinclair interests for 23 consecutive years. He was born at Cleveland, Ohio, and early in life moved to Petrolia, Pa., where his oil career started. From Petrolia, he went to Bradford, Pa., and then moved to Toledo, Ohio. When he was only 20 years of age, he owned producing oil properties at six different points in Wood County, Ohio.

With his production, he owned several strings of tools, and was active in the drilling contracting business. He moved to Independence, Kans., in 1903, when that place was the residence of H. F. Sinclair, with whom Mr. Connelly was destined to become associated.

He joined the Sinclair interests, and was in various departments, land and lease, production and later pipe line. He was in charge of oil production when Mr. Sinclair was senior partner in the firm of Sinclair & White, and was active in various corporations with Mr. Sinclair until 1916 when Sinclair & White sold out their Cushing properties, and in that year when the Sinclair Oil Company was formed, Mr. Connelly was made vice president. He was later made vice president and a director of the Sinclair Oil & Refining Corporation and held the same titles in the Sinclair-Cudahy Pipe Line Company which subsequently became the Sinclair Pipe Line Company.

In 1917, Mr. Connelly went to Houston, Tex., as president of the Freeport & Mexican Fuel Oil Corporation and the Mexican-Sinclair Petroleum Corporation and remained in charge of those corporations until 1922 when he was sent to Casper, Wyo., as vice president and general manager of the Mammoth Oil Company.

In May, 1928, he was made a vice president of the Sinclair Consolidated Oil Company and moved to New York from which point he directs all foreign work. He will make an inspection trip to Venezuela and Colombia, starting from New York early in November.

# PERSONAL PARAGRAPHS

Clyde M. Boggs, vice president and general manager of the Kanotex Refining Company, of Arkansas City, Kans., spent last week in Tulsa.

E. W. Delacour, of Shell-Mex, Ltd., is recovering after an operation for appendicitis in London.

* * *

W. E. Ramsey has returned to Oklahoma City from Los Angeles and has left again for New York.

* * *

Judge Amos L. Beatty, former chairman of the board of The Texas Company, spent a few days in Tulsa last week.

* * *

W. S. Farrish, president of the Humble Oil & Refining Company, of Houston, Tex., was a Tulsa visitor last week.

* * *

W. S. Hovis, of the American Tank Company's sales department, dropped over from Shreveport, La., to visit Tulsa this week.

* * *

T. B. Slick, president of T. B. Slick, Inc., has just returned to Tulsa, after a trip to New York, and his former home at Clarion, Pa.

* * *

L. P. St. Clair, vice president of the Union Oil Company of California, has returned to Los Angeles following a hasty trip to New York.

* * *

H. T. O'Brien, representing the Inter-Continent Petroleum Corporation of New York, has returned to Bucharest after a short stay in London.

* * *

T. Roots, of the Caribbean Petroleum Company at Maracaibo, has returned to Venezuela, after a business trip in England lasting several weeks.

* * *

W. L. Connelly, vice president of the Sinclair Oil Corporation in charge of production in foreign fields, will leave for a short stay in Venezuela on November 7.

* * *

W. L. Walker, chief geologist for the Empire Companies, and F. T. Clark, supervisor of geologic work in Kansas, made an inspection trip through central Kansas early in October.

* * *

Louis Borland, president of the Australian Roma Oil Company, Ltd., which controls 35,000 acres of prospective oil land, has been in Los Angeles shopping for machinery and equipment.

* * *

Richard T. Lyons, for the past year in charge of the land and geological departments of the Skelly Oil Company, was last week made a vice president and was also elected a director of the company.

* * *

Clyde Ellwood, general sales manager of Axelson Machine Company, Los Angeles, is in Tulsa and will leave soon for eastern points. Mr. Ellwood plans to attend the A.P.I. Convention in Chicago, in December.

* * *

Arthur Brown, who has been spending two months in Petrolia, Ontario, has left for the Burmah fields. He came to Canada by the Pacific route and in returning via England will have completed a trip around the globe.

* * *

Arthur Brown has returned to Petrolia, Ontario, from Burmah where he has spent the past six years. Mr. Brown, who came home via China and Japan, will return to Burmah next fall via the Suez Canal, making a complete trip around the world.

* * *

Earle W. Hodges, director of public relations for Henry L. Doherty & Company and second vice president of the International Lions Club, recently toured the Seminole, Oklahoma, Field holdings of the Empire and Indian Territory Illuminating Oil Companies.

* * *

J. C. Anderson, president of the Petroleum Securities Company, has taken a temporary leave of absence due to ill health. Mr. Anderson, a brother-in-law of E. L. Doheny, is taking this much-needed vacation after being in the harness for more than 21 years.

* * *

L. D. Gwynne, one of the old-timers in the oil business and a pensioner of one of the Standard Oil Company subsidiaries, has returned to Tulsa from his annual visit to Bradford. During his trip East he visited his old home at Custer City, Pa., and saw the place where the famous bull and bear fight was staged.

Frank P. Latimer, district geologist for the Indian Territory Illuminating Oil Company, is confined to St. Anthony Hospital, Oklahoma City, with infected lungs. His condition is somewhat improved.

* * *

O. W. Crick, formerly district sales manager of Phillips Petroleum Company at Amarillo, Tex., has been made general credit manager of the Independent Oil & Gas Company, with headquarters in Tulsa. Mr. Crick was purchasing agent of Highway Oil Refining Company before going to Texas.

* * *

John Darr, Pittsburgh, Pa., superintendent of the telegraph department of the Southern Group of Pipe Lines, who has been confined to the Columbia Hospital for two weeks, will leave for California this week, accompanied by Mrs. Darr and Dr. H. E. Kirschner.

* * *

Roy N. Bishop, who divides his time between the flour milling and oil business, being president of the Sperry Flour Mills and holding a similar position with the Universal Oil Company, was in Los Angeles looking over the Santa Fe Springs Field where the Universal company is drilling four new wells to the new deep zone.

* * *

Rufus J. Pilcher, chief scout of the Richfield Oil Company, has been made assistant to Dudley M. Steel, head of the company's aviation section sales department. Mr. Pilcher is a first lieutenant commanding the 476th Pursuit Squadron Aviation Reserve and was prominently identified with the National Air Races recently held in Los Angeles.

* * *

E. J. Sadler, vice president of the Standard Oil Company of New Jersey, is making an airplane inspection trip which takes him from his office in New York to Tulsa, for a visit to the Oklahoma fields, and then to California where he will spend a week. From Tulsa to California, he is accompanied by J. J. Conry, general superintendent of the Carter Oil Company.

* * *

Capt. E. E. Aldrin, manager of the newly-created aviation division of the Standard Oil Development Company, subsidiary of Standard Oil Company of New Jersey, has returned from an aerial tour which took him to many of the leading aviation fields in the United States, visiting Bellefonte, Pa., Dayton, St. Louis, Kansas City, Fort Riley, Cheyenne, Salt Lake City, Las Vegas, Los Angeles, El Paso, Abilene, Fort Worth, Little Rock, and Cincinnati.

* * *

Headed by Col. Robert W. Stewart, chairman of the board of the Standard Oil Company of Indiana, a party of officials of that concern have just completed an airplane trip over the West Texas, Arkansas and Louisiana, and Central Oklahoma fields, with a brief stop at Tulsa. The party which has returned to Chicago, was composed of Colonel Stewart, E. G. Seubert, president, Allan Jackson, E. J. Bullock, and R. H. McElroy, vice presidents.

* * *

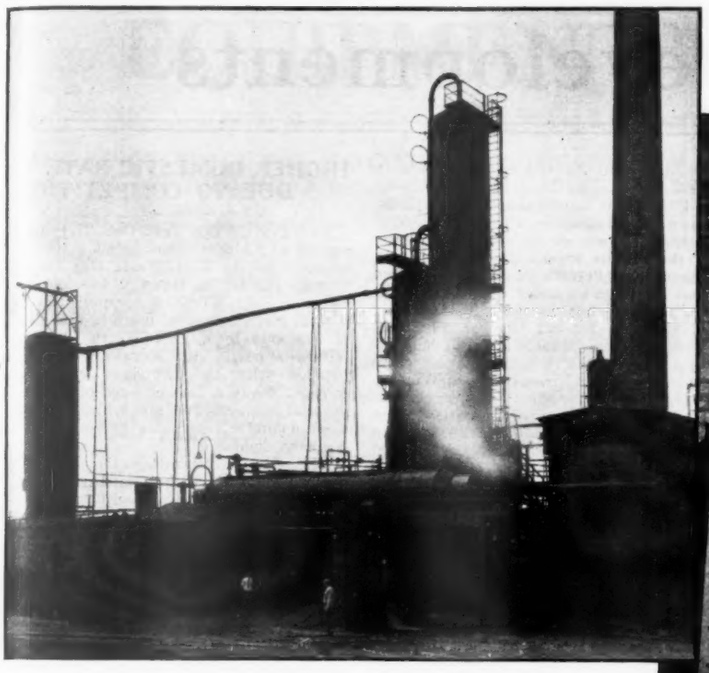
W. Chester Brown, in charge of development of production for the Union Oil Company of California, is in New York conferring with The Texas Corporation officials and W. F. Buckley, president of Pantepec Oil Company, regarding development of Pantepec's properties in Venezuela, which both the Union Oil Company of California and the California Petroleum Corporation, now controlled by The Texas Corporation are under contract to develop.

* * *

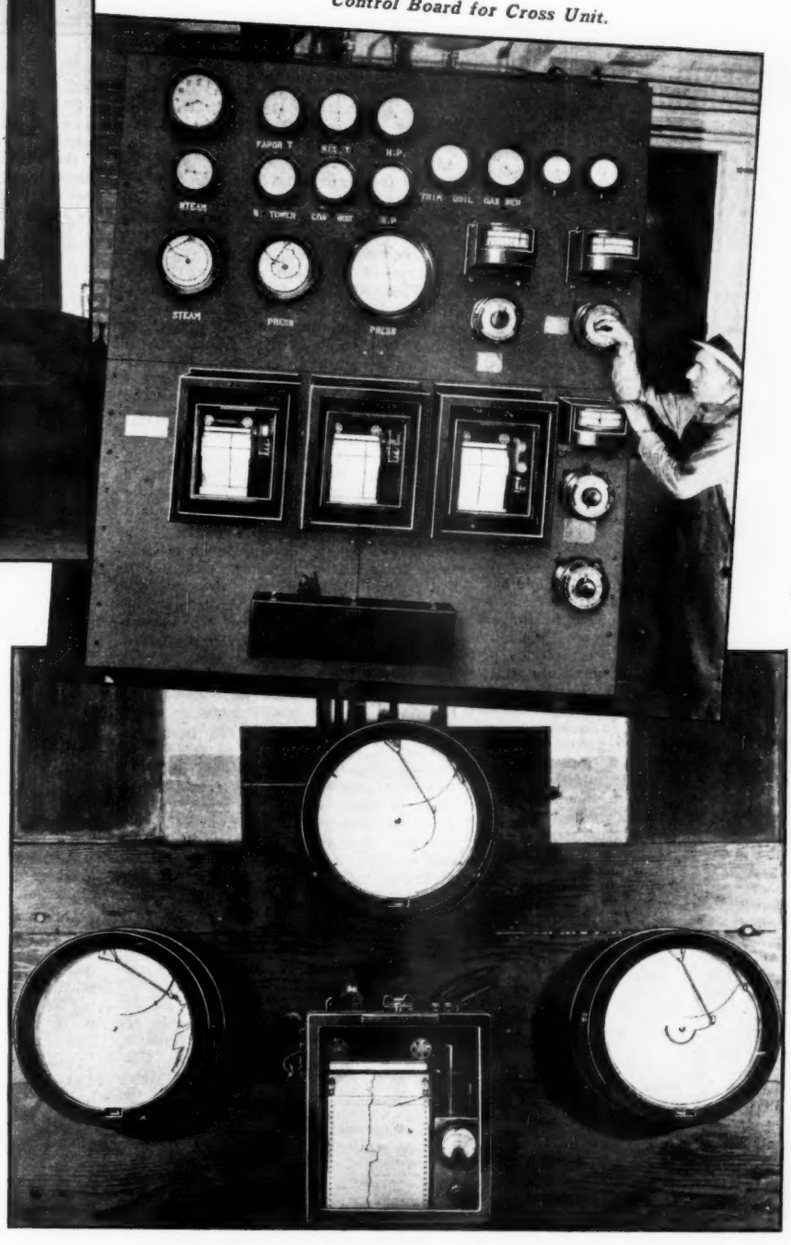
Webb W. Wilson, general manager of the oil tools division of the Byron Jackson Pump Manufacturing Company, accompanied by L. E. Vaughn, of the oil tools division, and G. A. Hagoes, of the disc bit division of the Byron Jackson Pump Manufacturing Company, are making an extensive tour through the Mid-Continent oil fields and will return to the Los Angeles factories during the first part of November.

* * *

Jerry B. Newby, vice president of the Petroleum Reclamation Company, Bradford, Pa., has tendered his resignation as an official of the company. Mr. Newby's resignation will become effective, according to information available, at the close of the present year. It is understood that shortly after he severs his connection with the Bradford concern, Mr. Newby, with his family will move to Oklahoma City where he will engage in the oil business for himself.



*Cross Unit.*



*Control Board for Cross Unit.*

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# Natural Gas Developments

## TEXAS-ENID GAS LINE NEARING COMPLETION

The Wheeler County, Texas-Enid 14-inch gas pipe line of the Consolidated Gas Utilities Co. is nearing completion and should be in operation about October 27, according to Logan W. Cary, president of the company. Only two short links in the line, totaling about 5 miles, remain to be connected. The line will have a carrying capacity from 30,000,000 to 35,000,000 feet of natural gas and will bring additional supply to many cities and towns in Oklahoma and Kansas now being served by the company. It also will bring gas for the first time to the towns of Weatherford, Thomas, Custer City, Watonga, Hitchcock, Southard, Okeene, Canton and Fairview. Natural gas lines have practically been completed.

The Consolidated Gas Utilities Co. has gas reserves of approximately 84,000 acres including large lease holdings and gas purchase contracts in the Wheeler County extension of the Amarillo Field as well as in three Oklahoma gas fields and in the shale gas area in southeastern Kansas. The company has gas holdings at present sufficient to assure its customers an adequate supply of gas for longer than 20 years, according to President Cary. The company, upon completion of the Wheeler County, Texas-Enid line, will supply natural gas at wholesale or retail to 51 towns or communities in western and northern Oklahoma and south central and southeastern Kansas, serving a territory with an estimated population of 400,000. In addition to the towns which soon will be hooked on to the lines and receive natural gas service for the first time, the company is now distributing natural gas on a retail basis to citizens of Fort Sill, Elgin, Sayre, Fletcher, Hominy, Cushing, Tonkawa, Blackwell, Braman and Garber in Oklahoma and Nickerson, Sterling and Lyons in Kansas. It supplies gas wholesale at the city gates to Lawton, Marlow, Duncan, Comanche, Apache, Altus, Blair, Mangum, Granite, Willow, Carter, Erick, Elk City, Enid, Hunter, Pond Creek and Medford, all in Oklahoma, and to Caldwell, Kans. The Larutan Gas Corp., a subsidiary, has extensive industrial consumers in Wellington, Wichita and Hutchinson, Kans. The Midwest Gas Corp., another subsidiary, controls considerable holdings around Neodesha and Chanute, Kans.

## MAGNOLIA'S TELESCOPIC GAS LINE IN OPERATION

LATEX, Tex., Oct. 27.—Magnolia Gas Co.'s 161-mile welded telescopic high-pressure gas transmission system from Sarepta, La., by way of Sterlington in the Monroe gas field, has been tested and placed in operation. Construction of this line marks the building of the first line designed for high pressure and high speed in transmission. It was built with 16-inch, 18-inch and 20-inch diameter pipe which was welded throughout.

New A. O. Smith pipe was used and 40 miles of the 20-inch pipe was welded with the electrical process as was 15 miles of the 16-inch. Magnolia Gas Co.'s acetylene welding crews completed the remaining 106 miles of welding work.

A line pressure of 900 pounds was built up to test the transmission system and it will be operated with a pressure ranging from 600 pounds to 750 pounds. Around 125,000,000 feet of gas can be put through the 25 miles of pipe between Alto and Sterlington and 100,000,000 feet daily is the rated capacity of the system from Sterlington to Sarepta.

Operation under high pressures has been satisfactory thus far and frequently the gas is moving through the pipe at a velocity of 80 miles per hour.

It is reported the Magnolia Gas Co. will buy between 36,000,000,000 and 40,000,000,000 feet of gas within the next year and will transport better than 100,000,000 feet daily over that period.

### Extensive System

The company has a network of transmission systems heading out of North Louisiana and terminating on the Gulf Coast on the southern route and Dallas and Fort Worth on the western route. Until recently the origin of the systems was at Sarepta, La. The recent completion of the line east from Sarepta to Alto afforded a new and vast reserve for the company.

Latex station near Latex in East Texas is the main line station. Five industrial centers afford the bulk of the market for the main lines. On the southern line Port Arthur, Beaumont and Port Neches take the bulk of the industrial load while Fort Worth and Dallas afford the main outlet for the western line.

A 200-mile transmission system extends west from Latex to Fort Worth and Dallas while at 167-mile system goes south to the Gulf Coast. A 20-mile line extends from Beaumont to Port Arthur, a 55-mile line goes north from Latex to Sarepta in North Louisiana, and the 167-mile system extends east from Sarepta to the Monroe district in northeastern Louisiana.

All of the main lines are telescopic welded systems, the first of their kind to be designed and built. The first line was built several years ago from Sarepta south to Beaumont. That system paralleled the Magnolia Pipe Line Co.'s oil line from North Louisiana and Arkansas and where possible gas engines were installed in the oil line pump stations and utilized the gas for fuel.

## COMPRESSOR STATION SUPERINTENDENTS MOVED

Several personnel changes were recently effected in the compressor station department of the Cities Service Gas Co. occasioned by the erection of the Higgins, Tex., and Corwin, Kans., stations.

E. M. Rowland, superintendent of the Tallant compressor station, was promoted to assistant superintendent of the compressor station department and will have supervision of the stations on the old Empire and Kansas Natural system. This position was formerly held by Bert Milan who was promoted to his present position at Wichita. Mr. Rowland will maintain his headquarters at the Tallant plant for the present. T. F. McAdams, employed at Tallant for eight years, will be the operating engineer in charge.

Melvin L. Place, superintendent at Hogshooter for a year, has been transferred to Higgins, Tex., and will direct the operation of the new compressor station now under construction, about 12 miles south of Higgins and when complete will contain five 1,000-horsepower Cooper engines and auxiliary equipment. Mr. Place started with the company in October, 1914, at Hogshooter and was promoted to the superintendency in 1927.

J. H. Richardson, who has supervised the operation of the Wichita compressor station for 12 months, was transferred to the Corwin station now under construction, about 1½ miles southeast of Corwin, Kans., and will have the same capacity as the Higgins station. Mr. Richardson has been with the organization for 17 years, starting with the Kansas Natural Gas Co. in 1911, at the Grabham station. He was at Altoona in 1916, Petrolia in 1921, and when the Welda station was completed in 1924 assumed the duties as superintendent, remaining until transferred to Wichita in 1927.

E. E. Van Lanningham, who will assume Mr. Richardson's former duties at Wichita, is one of the veteran employes of the Empire organization, having been employed at Petrolia in July, 1905, when that station was under construction. He held the position of oiler and engineer at that plant until October 13, 1926, when he was transferred to the new Craig station as superintendent, where he remained until transferred to Wichita.

Harold Larson, present superintendent of the Craig compressor station, first came with the company in 1917 as an oiler at the Petrolia station of the old Kansas Natural Gas Co. He was later promoted to auxiliary engineer and operator until given supervision of the Craig station.

H. L. Hunsaker, superintendent of the Grabham station, was transferred to a similar capacity at Mooreland, and O. W. Price, who has been at Mooreland since November, 1927, will direct the operation of Grabham. Mr. Hunsaker has been with the company since 1913 and has also seen service at Hogshooter, Tallant, Drumright and the Bartlesville meter shop. Mr. Price has been with the organization since September, 1913, employed at the Petrolia, Grabham, Altoona, Hogshooter and Mooreland compressor stations.

## MUSKEGON CONSUMING 2,000,000 FEET DAILY

MUSKEGON, Mich., Oct. 27. — More than 2,000,000 feet of natural gas a day, or more than double the former manufactured gas consumption, is being used by domestic consumers of Muskegon and Muskegon Heights and two of the larger Muskegon industrial plants.

Domestic consumers are using an average of but 600,000 feet a day, or about half the former daily consumption of manufactured gas. They are being supplied by the Muskegon Traction & Lighting Co., which takes its supply from three wells, one in the Traverse formation and two in the Dundee.

The Continental Motors Corp. and the Lakey Foundry & Machine Co. are using almost twice as much as they did of the manufactured gas with a daily consumption of 1,600,000 feet obtained through their private pipe line to the Muskegon Field. They have contracted for 1,000,000 feet a day maximum from one well and from 1,000,000 to 2,000,000 from each of two other wells. All of these wells are in the Dundee formation at from 2,000 to 2,050 feet and came in with an open flow capacity of 4,000,000, 5,250,000 and 6,000,000 feet a day, respectively.

The Hope Engineering Co. has completed the laying of about 2½ miles of 12-inch main for the West Michigan Consumers Co., organized by a group of local manufacturers other than the two associated automobile plants which have their private pipe line.

No outside pipe line company has as yet started to lay line to transport the gas from the Muskegon Field to other cities. The Michigan Pipe Line Co., a subsidiary of the Ottawa Oil Corp., of Grand Haven, has franchises for laying mains and selling gas as far south as Grand Haven.

### GAS FOR MONTEBELLO

SAN FRANCISCO, Calif., Oct. 27.—The Los Angeles Gas & Electric Co. has been granted authority by the State Railroad Commission to exercise its franchise for the distribution of natural gas in Montebello, Los Angeles County.

## HIGHER DOMESTIC RATE DUE TO COMPETITION

FORT WORTH, Tex., Oct. 27. — One reason why higher domestic gas rates are essential to the Fort Worth Gas Co. is because the LaTex Gas Co. was allowed to enter Fort Worth and supply gas to several large industrial users in this city, it was said by a Fort Worth Gas Co. witness appearing in Federal Court. Competition with the Louisiana gas firm brought about a loss of part of the industrial business and made higher rates from domestic consumers necessary, the company holds.

The city is contesting the domestic gas rate hike which the company was denied recently by the Railroad Commission of Texas, and which is now being asked before the court of equity on the grounds that present rates are confiscatory.

## TWO FRANCHISES GRANTED BY MUSKOGEE VOTERS

Muskogee's gas rate agitation, started two years ago which resulted in the organization of two new gas companies reached the voters last week in ballots on four propositions.

Two of those proposals provided for the granting of franchises to the new companies, the Muskogee Natural Gas Co. and the Municipal Gas Co.; a third proposed a $1,250,000 bond issue for the construction of a municipally owned gas distribution system, and the fourth to amend the city charter to provide for a utility board of five men to be appointed by the mayor and to have control and management of the municipally owned system.

The voters rejected the proposals for a city-owned system and voted distribution franchises to both the new companies.

The Municipal Gas Corp., is an S. R. Morgan interest, and the Muskogee Natural Gas Co. is an Elizabeth Mills interest. Morgan interests operate in the Sapulpa, Wagoner and Summerville areas and the Mills interests in Keefeton and Quinton areas.

## WAVE OF PROMOTIONS IS BELIEVED CHECKED

Leaders in the rapid development of the natural gas industry in Oklahoma are interested in the opinion expressed by Christy Payne, president of the Peoples Natural Gas Co. of Pittsburgh, Pa., at the convention of the American Gas Association at Atlantic City, that the wave of promotion of natural gas projects by irresponsible parties has been halted, or, at least, interrupted. Mr. Payne told the natural gas department session of the Atlantic City convention that in his judgment the present price of fuel oil and the present condition of the New York money market had practically restricted natural gas projects to those which will stand the closest scrutiny of engineers and financiers, whose operations are legitimate and dependable. Mr. Payne made a critical analysis of 21 projects seeking to enlist capital available for investment in the recent past, indicating one or more points essential to a safe and sound investment lacking in each of the projects analyzed.

### NEW LINE TO ST. JOSEPH

LEAVENWORTH, Kans., Oct. 27.—Construction has been begun on the new Cities Service Co. pipe line which will extend 20 miles from the east end of the bridge across the Missouri River at Leavenworth to St. Joseph, Mo. When completed St. Joseph will have a pipe line connection with the natural gas fields to southern Kansas and Texas.

# EQUIPMENT AND SUPPLIES

## DRIVERS OF TRACTORS TO BE SENT TO SCHOOL

Instead of holding a tractor contest on its Burbank lease, as it has done in recent years, the Phillips Petroleum Co. will send each of the drivers of its fleet of 25 OilPull tractors to the Rumely Tractor School in Wichita, Kans., next winter with all expenses paid and wages continued. The school consists of several days of instruction in care of tractors. Lectures are given by tractor experts and detailed directions are given for making all kinds of repairs. The Phillips company heretofore has held two annual contests, one for general mechanical condition of each driver's tractor, the other a 50-foot race to show quickness in starting and speed of operation. The winner of first place in each of these contests was sent to the Rumely School. So high a degree of efficiency had been shown by all its drivers that it was decided to send all to the school this year without holding any contest.

### SHOPS MOVED FROM NEW YORK

The marine machine shops of the William Cramp & Sons Ship & Engine Building Co., New York, which have been idle since Cramps stopped building ships in 1926, are being moved to Philadelphia.

More than $2,000,000 worth of tools and inventory of the De La Vergne Machine Co., one of the six subsidiaries of Cramp-Morris Industrials, Inc., are being transferred from New York. By November they will be installed in the Philadelphia buildings, offering employment for several hundred additional skilled workers in the Kensington district. From a manufacturing point of view the move is designed to increase efficiency of operation, effect economies, and to add to the capacity of the De La Vergne company, which is one of the oldest manufacturers of refrigerating machinery and Diesel engines in the country. The latter are used by oil pipe line companies, industrial plants, utilities companies and marine propulsion.

### NEW GENERATORS ON MARKET

Three medium pressure type acetylene generators for welding and cutting have been placed on the market by the Oxweld Acetylene Co., New York. The type MP-2, built in two sizes, having 50 and 100-pound carbide capacity, respectively, replaces the earlier medium pressure generator. The type MP-3, having 300-pound carbide capacity, is entirely new. These three generators are suitable for supplying pressure type or medium pressure welding and cutting blowpipes.

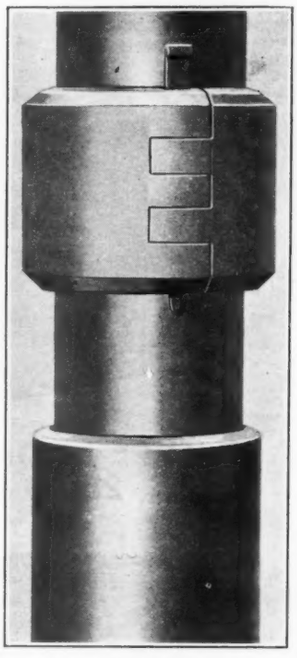
### BURNER USES OIL AND GAS

Fuel costs for stills and boilers are said to have been reduced by the Bendster combination oil and gas burner, manufactured by the Bendster Burner & Engineering Co., St. Louis, Mo., not only because it assures more complete combustion of ordinary oil and gas fuels, but also because it burns lower-grade fuels, such as residuum and sludge mixtures. The change from oil to gas is made by simply opening and closing supply valves. Either oil or high-pressure gas can be burned, or the two simultaneously.

The Bendster Duo-Mix gas burner is designed for low-pressure gas and is said to use a minimum amount of gas to deliver the required amount of heat to the oil field boiler, still or stationary boiler. The Duo-Mix, according to the manufacturers, operates on high-pressure gas as well as on low-pressure, although designed primarily for low pressure. It has two stages of air mixing and is said to operate successfully with poor draft.

## GOODRICH COMPANY NOW MAKING CASING GUARD

Rotary drilling operators are seeking elimination of friction between drill pipe and casing by the use of various types of bearings. The Grip-Tite casing guard, manufactured by the B. F. Goodrich



Rubber Co., Akron, Ohio, has two unique features which are likely to appeal to the practical driller. One is the fact that the guard does not depend upon the elacticity of the rubber to hold its position on the pipe but is secured by a positive mechanical grip. The manufacturers say no force or blow can move the guard in any direction. Another feature is the ease of application. The guard is made in two half sections which can be slipped over the pipe by hand instantaneouly. The two halves dove-tail together at the edges where they are engaged by tapered steel pins driven in by a hammer.

Driving in the tapered pin draws together the steel band reinforcements, vulcanized into the body of the guard, so that the surface is held against the drill pipe with a powerful grip. The guard can be removed as easily as it is applied and transferred to any other position on the drill pipe. The outside of the rubber when in position is slightly larger than the diameter of the tool joints but not large enough to present any obstruction to the use of over-shots.

The rubber is united to the metal reinforcement by the Vulcalock process, in which resilient rubber is "locked" by vulcanization to the metal.

The Grip-Tite casing guard reduces twist-offs, prevents wearing of casing walls, affords a marked power saving, a higher rate of drilling and more hole per day.

### SHOULDER TOOL JOINT

The A.P.I. Shoulder Tool Joint, now manufactured and marketed by the Oil City Iron Works of Shreveport, La., is made of heat-treated steel throughout and the threads are automatically milled on by a special method. Automatic milling eliminates the human element and the manufacturers say, makes it practically impossible for any inaccuracies to occur.

## CARBON DIOXIDE GAS FOR FIGHTING FIRES

The American-LaFrance and Foamite Corp. offers a system of carbon dioxide protection against fire known as the Alfite system. The system employs an inert gas known as Alfite gas, confined in a liquid state in metal cylinders 51 inches in height and 8½ inches in diameter under a pressure of 900 to 1,000 pounds. When the system is placed in operation a plunger ruptures a copper disc, used to seal the gas in the cylinder, and permits the gas to pass through piping to nozzles located at the fire. Here the gas is liberated into the room or space being protected where it expands and dilutes the air so as to smother the flame. The system may be operated manually, semi-automatically or automatically.

### TRUCKS SOLVE SPEED PROBLEM

A fleet of 20 International Harvester motor trucks with dump bodies recently played a part in speeding up construction of a 25-acre oil reservoir near Lomita, Calif. The Robinson & Roberts Co. of Los Angeles, which operates this fleet of trucks, had the contract for the reservoir.

Owing to increase in land values in southern California, oil companies have adopted a new type of reservoir and the old depth of 25 feet has been increased to 40 or more. This made it necessary for the Robinson & Roberts Co. to change its methods of hauling materials and to use motor trucks instead of mules and wagons, as formerly.

Time is an important item in the construction of these reservoirs, and operations usually must be kept going night and day. At one time the Robinson & Roberts Co. had to displace 325,000 cubic yards of earth in 40 days. Four hundred mules with wagons were put on the job. Animal power was found slow and expensive and the fleet of trucks then was put on the job. The company is planning to use trucks hereafter on all its big construction jobs.

### BLISS JOINS JENSEN STAFF

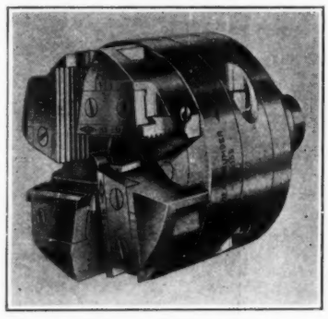
Sam Bliss, born in the oil fields, for 20 years a driller and more recently a contractor and producer, has joined the staff of Jensen Brothers Manufacturing

Sam Bliss

Co. and will represent that concern in West Texas in the sale of Jensen jacks and pumping units. Mr. Bliss has a wide acquaintance with leaders of the oil industry in Oklahoma and Texas.

## NEW DIE HEAD IS MADE BY LANDIS MACHINE CO.

The Landis Machine Co., Inc., of Waynesboro, Pa., has placed upon the market a new Landis die head, the Landex head, designed for application to automatic screw machines. This head is of the rotary pull-off type. It is opened by retarding the forward movement of



the die head or die holder and is closed automatically by an attachment on the automatic screw machine.

The Landex head is made of a high grade of carbon steel and is heat treated throughout and ground. This construction is designed to reduce wear to a minimum, prolong the life of the head and insure a high degree of accuracy.

The head is flexible on its shank so as to compensate for any misalignment in the machine or in the work to be threaded. It is locked within itself under service conditions by the engagement of two hardened closing pins and closing pin bushings. The spring for opening the head is in the adjusting ring. It has a tension uniform for all diameters. Landex heads are made in one-half, thirteen-sixteenths and 1⅛-inch sizes.

### FOR NATURAL GASOLINE

The first natural gasoline plant to be erected in the rejuvenated Santa Fe Springs, California, Field, has just been contracted for by the Norwalk Co. It is to be built on the company's Little Lake Road lease. The contract, let to J. A. Campbell, of Long Beach, Calif., calls for a 30,000-gallon plant, Campbell equipment being specified. There will be included an "oil-froth" stripper, a recent development of the Campbell organization. All equipment is to be of riveted construction, built for a working pressure of 50 pounds and a factor of safety of at least 5.

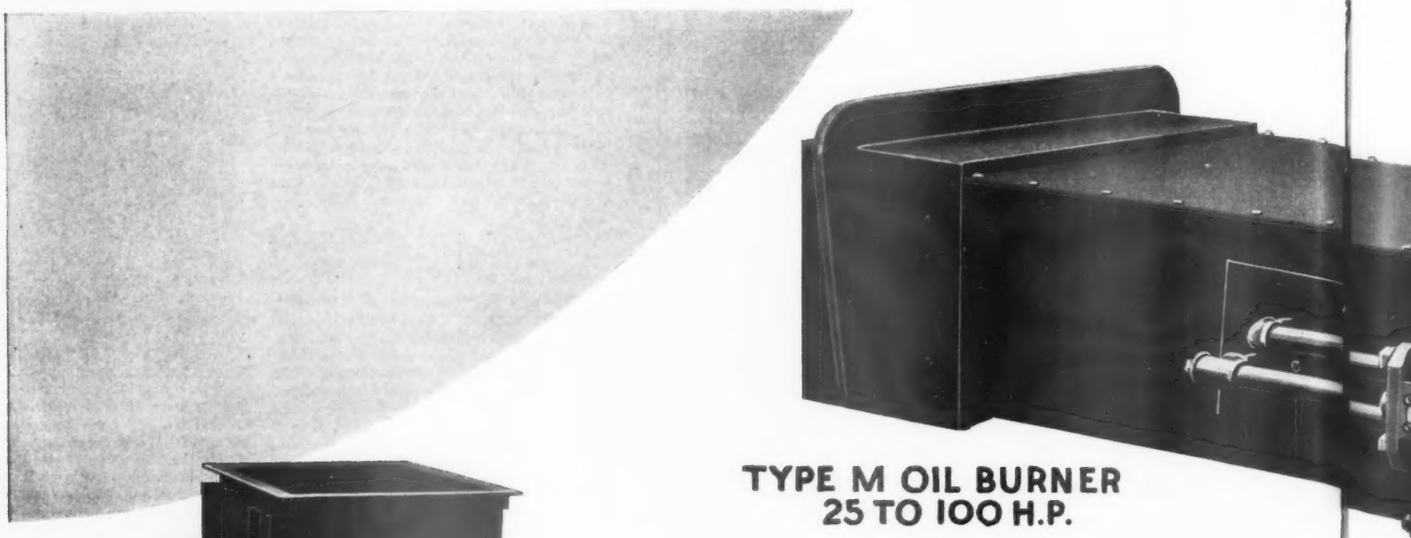
### PATTERSON-BALLAGH MOVES

The executive offices of Patterson-Ballagh Corp. in Los Angeles have been moved to the Insurance Exchange Building. The manufacturing plant has just been completed at Sixty-fifth Street and Wilmington Boulevard in Los Angeles and will be devoted exclusively to the manufacture of Bettis protectors. The crude rubber is purchased direct from foreign growers and is processed and cured within the Patterson-Ballagh plant. Several intricate testing machines and a research laboratory have been installed.

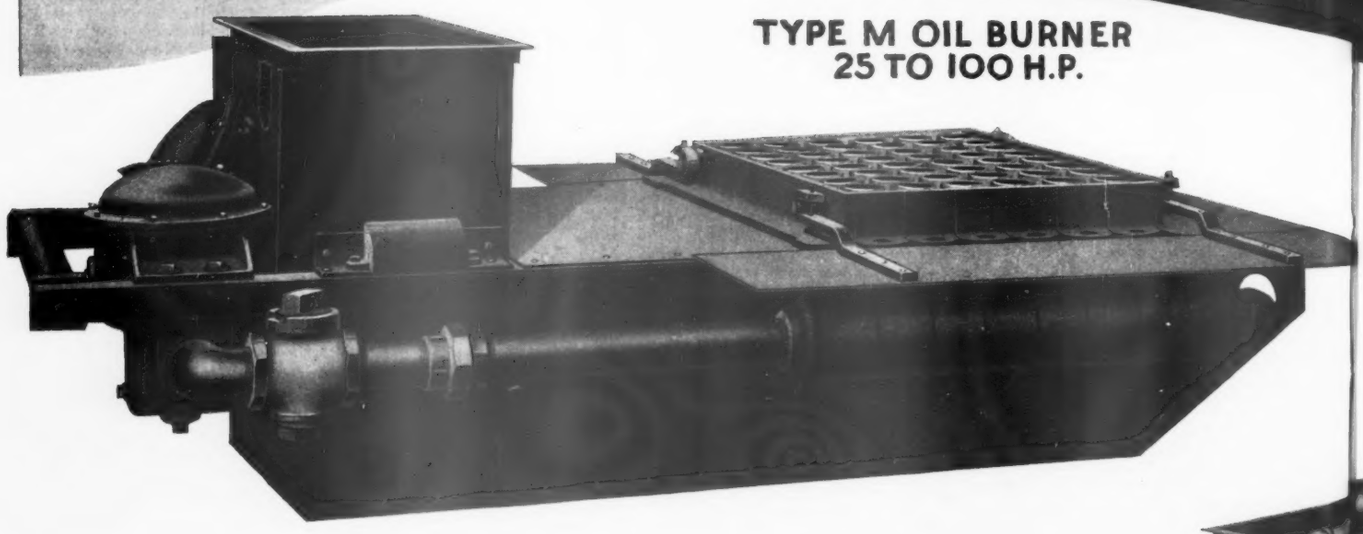
### COLORS DISTINGUISH FUSES

The Trico Fuse Manufacturing Co., Milwaukee, Wis., has placed on the market a new color creation in plug fuses for electric light circuits. These fuses have colored tops, a color for every size. Fuses 0-6 amperes have a brown top, 10 amperes a yellow, 15 amperes blue, 20 amperes pink, 25 amperes red and 30 amperes green.

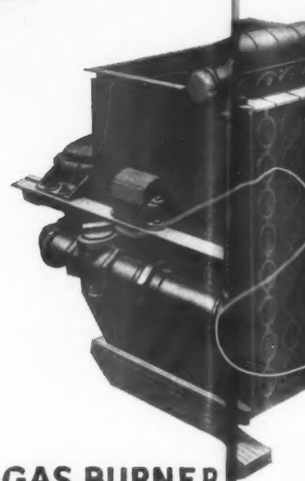
# DORECO



TYPE M OIL BURNER
25 TO 100 H.P.



TYPE H GAS BURNER
25 TO 75 H.P.



TYPE P GAS BURNER
70 TO 150 H.P.

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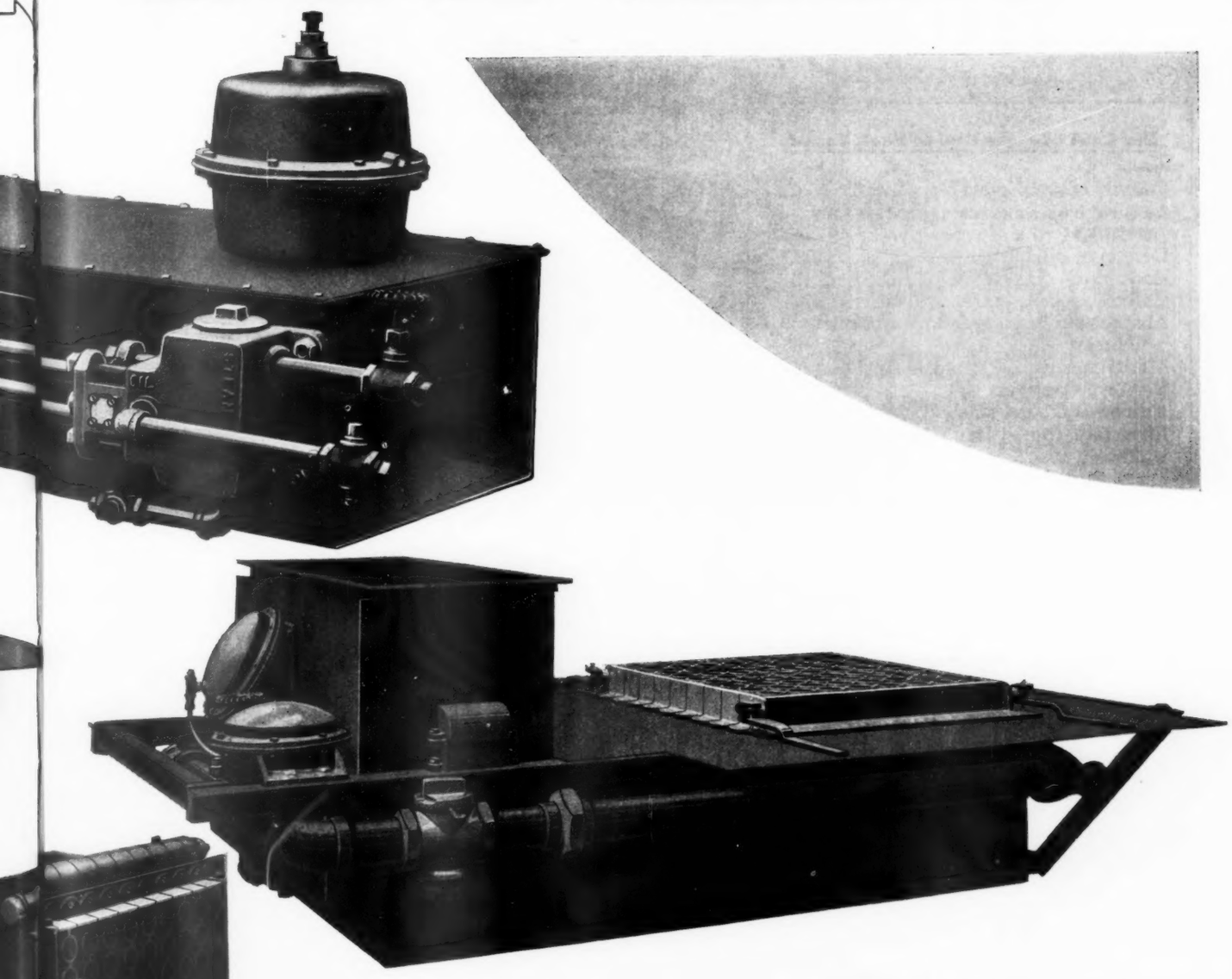
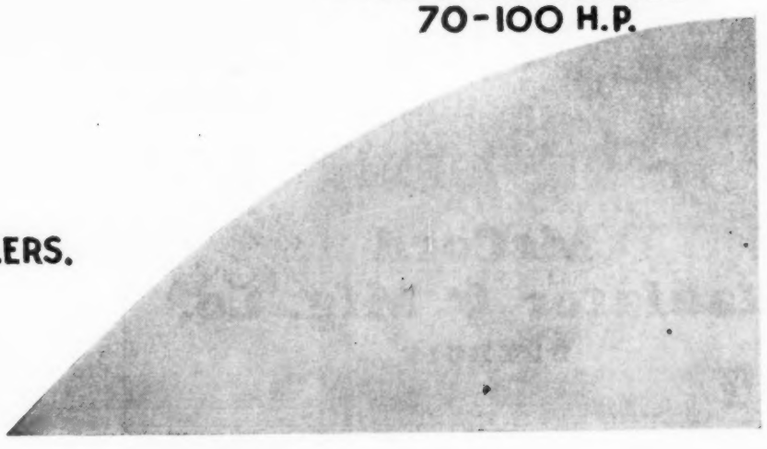
# BURNERS



TYPE J GAS BURNER
70-100 H.P.

FOR RETURN TUBULAR BOILERS.



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NA SUPPLY

CONNIES

# Unnecessary-Eliminate It!

**Per Cent of Fires Due to Each Cause.**

| Cause— | Per cent |
|---|---|
| Failure of auto shut-off valve | 20 |
| **Loose connections and leaky piping** | **15** |
| Defective oil burner | 11 |
| Back fires | 12 |
| Carbonization | 7 |
| Absence of or extinguishment of pilot light | 6 |
| Miscellaneous | 6 |
| Careless operation | 4 |
| Absence of auto shut-off valve | 4 |
| Imperfect combustion | 4 |
| Unknown | 3 |
| Dirty flues | 3 |
| Electric short circuit | 3 |
| Overheated furnaces and flues | 2 |

—OIL & GAS JOURNAL
Aug. 2, 1928

# McKIM METALLIC—ASBESTOS GASKETS Make Tight, Leak Proof Joints

McCord Radiator & Mfg. Co.
DETROIT


## KENTUCKY-TENNESSEE

(Continued from Page 67)

Miller are good for 2 bbls.; but No. 10 on the Henry Miller was a dry hole.

In Powell County, District 15, Keenan & Adkins' No. 5 on the Joe Mullins, is a 5-bbl. pumper, and the Hillside Oil & Gas Co.'s No. 10 E. A. Wireman, is also a 5-bbl. pumper.

In the Torrent Field of Wolfe County, District 9, Garrison Brothers and others' No. 14 E. B. Roberts farm, produced an initial of 6 bbls.

In Johnson-Magoffin Counties, District 30, the S. T. S. Development Co.'s second test on the Dan Davis is reported too small to pump, and goes down as a dry hole.

In Floyd-Knott Counties, District 21, the Disteel-Martin Oil & Gas Co. found a fair gas well in No. 1 on the Joe Baldridge farm.

### Week's Work

A summary of the week's work in the Kentucky fields shows 37 completions, 25 producers with an initial production of 956 bbls., 11 dry holes and 1 gas well.

| County— | Oil Comp. | wells Prod. | Dry | Gas |
|---|---|---|---|---|
| Ohio | 11 | 6 358 | 5 | 0 |
| Daviess | 10 | 10 567 | 0 | 0 |
| Estill | 7 | 5 7 | 2 | 0 |
| Wayne | 2 | 1 10 | 1 | 0 |
| Powell | 2 | 2 8 | 0 | 0 |
| Allen | 2 | 0 0 | 2 | 0 |
| Wolfe | 1 | 1 6 | 0 | 0 |
| Floyd-Knott | 1 | 0 0 | 0 | 1 |
| Johnson-Magoffin | 1 | 0 0 | 1 | 0 |
| Total | 37 | 25 956 | 11 | 1 |

### Ohio County Wells

In the Ambrose Pool of Ohio County, James C. Ellis brought in his No. 35 on the John R. Weller 110 acres, in the heart of the pool, reported good for 150 bbls. initially. In the same pool and adjoining the Weller lease, the Wood Oil Co.'s No. 35 on the Mary J. Elmore farm, is reported with an initial of 100 bbls. These are the two heaviest drilled leases in the Ohio or Davies County Fields.

South of Friendship Church in Ohio County, Turner and Lewis drilled a dry hole on the A. S. Edge farm. This well was drilled 5 feet in the Barlow sand without any showing worthwhile, and the oil is usually found near the top of the sand, although something might be found if drilled deeper, but it is doubtful.

In the Dundee Field, the Sunnydale Oil & Gas Co.'s No. 1, on the J. B. Mitchell 100 acres, produced an initial of 8 bbls. In this well a string of 328 feet of casing was set; sand at from 344 to 362 feet and sent to a total depth of 409 feet.

The White Plains Oil & Gas Co. set a string of 420 feet of casing, in No. 6 on the Ada Kelley 64 acres, in the Kelley Pool, found sand from 428 to 445 feet and went to a total depth of 450 feet, where the well was shot, and responded with 50 bbls. initial production. In the same pool, S. H. Russell's second test on the E. E. Fuqua was dry at 402 feet.

In the Ward Pool, C. Claypool and others' No. 6 on the J. L. and J. H. Ralph 125 acres, produced an initial of 30 bbls. In this well a string of 422 feet of casing was set, sand found at from 439 to 456 feet, where it was shot.

In the Whittaker Pool, the Ohio Oil Co.'s No. 2 on the E. L. Patton, that is reported at 20 bbls. A string of 565 feet of casing was set, sand at from 570 to 590 feet and a 5-foot pocket drilled, making the total depth 595 feet.

Creek Drilling Co. found a dry hole at 620 feet at a test on the T. L. Hickey farm, in the King Pool.

S. H. Russell's No. 6 on the A. P. Kelley heirs, in the Kelley Pool, was a dry hole at 410 feet, and the Ohio Oil Co. has another at No. 6 on the Charles Roach 134 acres, in the Whittaker Pool, at 595 feet.

### Daviess County Wells

The most interesting find in Daviess County since the last report was the bringing in by Daly & Lowman of a wildcat on the Emmett Burton 200-acre farm, in the southern part of the county, near Lewis Store on the Hartford Road, about 10 miles southeast of Owensboro, which found 20 feet of fairly rich sand at a total depth of 776 feet, and is estimated at from 60 to 75 bbls. While there were 20 feet of pay, 10 feet of the sand showed some water but in small quantity. This test will bring about an active development in the area which is a considerable distance from production, prices ranging from $5 per acre up to $25 and some above. Daly & Lowman recently sold their lease on the Bob Hamilton 100 acres in the Ambrose Pool, for a little better than $100,000.

The 10-foot water sand was plugged off before the shot. From the formation oil men concluded the first well drilled on the Burton lease is an edge well, and is the opening of a probable large pool. The belief was expressed by old drillers the pool would be found trending northward and westward. This was indicated, was said, from the formation of the water sand in the hole. The well is drilled near the southern boundary of the lease, and if the estimate of drillers is correct, Burton has the greater part of his 200-acre tract for locations for drilling. Walter Daly, of Daly & Lowman, is a son of the late Martin B. Daly, of Cleveland, Ohio, while Lowman, is a well-known operator also from Cleveland.

Daugherty and Young drilled in and shot their test on the Ambrose Feldpausch farm in the Red Hill area of Daviess County, estimated around 75 bbls. initial production. This is a semiwildcat some distance from production and extends the Red Hill Pool to the northwest. After the bringing in of this well an oil operator made a remark about the Red Hill area that the land must have been made specially for drilling oil wells, for it did not look good for much of anything else. This well got its pay at close around 670 feet.

In the Brown Pool, Smith, Randolph and others brought in another good well in No. 3 on the Oscar Wells 80 acres, with an initial production of 160 bbls.

Goldburg & Garrison drilled a test on the Lindsay Purcell land, one-half mile east of Red Hill, which is estimated at 10 bbls. Rowe and Randall's No. 1 on the Harry Simmons lease, in the same pool, produced 8 bbls. from a depth of 945 feet.

In the Hayden Pool, the Three Sands Oil Co., or Miller & Damron's No. 6 on the Alvey Tyler farm, just south of the Hayden farm, is reported better than 100 bbls. initial production.

Having, Gray and others' test on the Ward farm, in the Jones Pool, west of Whitesville, is estimated as good for 35 bbls. L. C. Clough and others' No. 5 on the C. M. Jones farm, in the Jones Pool, according to late report, is showing for 70 bbls. initial, being one of the best wells found in the pool, and upon the same lease which the discovery well was located.

L. C. Young's well on the J. L. Park farm, in the Red Hill Field, looks like an initial producer for 30 bbls., while his No. 3 on the K. N. Yeiser farm, west of the Hayden farm, is reported at 40 bbls. initially.

### Allen County Wells

Two completions were reported from the Scottsville Field, in Allen County, and in what is known as the Settle district, both being dry holes. They were Lee Moore and others' No. 1 on the Budy Williams, at 485 feet, and J. R. Evans and others' test on the L. M. Stovall, at 385 feet.

### Field Notes

The Wood Oil Co. will probably not drill any more wells at this time on its Mary J. Elmore lease, in the Ambrose Pool of Ohio County, there being 35 now on the farm. The Weller farm of James C. Ellis also has 35 wells already drilled with several other locations yet to drill.

Wood Oil Co. is starting three new wells in Ohio County, the first, No. 4 on the Almond Duke farm, in the Sunnydale Field; the second on the Westerfield farm, at Reynolds Station, and the third on the Charley McKinley farm, at Bell's Run, northwest of the Ambrose Pool.

Miller & Damron, or the Creek Drilling Co., is starting another well on the Howard farm, offsetting No. 5 on the

(Continued on Page 87)

# LUDLOW VALVES

## IRON BODY BRONZE MOUNTED ALL IRON CAST STEEL

## ALL SIZES PRESSURES

*For Refinery, Pipe Line, Drilling-Hand, Cylinder & Electrically Operated*

*Distributed by*

MID-CONTINENT SUPPLY CO.,
HOUSTON, TEX. FORT WORTH, TEX.
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TRADE LUDLOW MARK

THE LUDLOW VALVE MFG. CO. *CATALOG ON REQUEST*
TROY, NEW YORK

KANSAS CITY - CHICAGO - BOSTON - PITTSBURG

# Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

*In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.*

*Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.*

*In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.*

*In case an immediate answer is important, one will be given by mail if the writer requests it.*

## WANTS LIST OF FORMATIONS

**Will you be so kind as to send or obtain for me a list of the different ground and rock formations that one is apt to encounter when drilling an oil well in both the Seminole district of Oklahoma and the Coastal Plains territory of Texas? Have you a dictionary or list of words most commonly used in the oil language? I am a stenographer and have occasion to use such words, as well as those pertaining to surface and underground formations.—C. V.**

For information upon the subsurface formations in the Seminole district you are referred to an article entitled "Seminole Area Subsurface Formations," by J. L. Dwyer, published on page 70 of The Oil and Gas Journal of February 2, 1928.

You are also referred to the United States Bureau of Mines report upon the Seminole Field, Oklahoma, by C. R. Swarts, C. R. Bopp, and W. S. Morris, entitled "Preliminary Engineering Report on the Seminole Pool, Seminole County, Oklahoma."

For information upon the geologic formations of the Gulf Coast region you are referred to the following publications: "Geology and Underground Waters of the Southeastern Part of the Texas Coastal Plain," by Alexander Deussen, United States Geological Survey, Water Supply Paper 335; "Geology of the Coastal Plain of Texas, West of the Brazos River," by Alexander Deussen, United States Geological Survey, Professional Paper 126; and "Geology of the Salt Dome Oil Fields," published by the American Association of Petroleum Geologists.

In reply to the last part of your question, several glossaries of petroleum engineering terms are under preparation, but none of them has been completed. Volume 2 of "Handbook of the Petroleum Industry," by David T. Day, contains a glossary of terms used in the oil industry which you might consult with profit.

## WHAT IS THE GAS PRESSURE?

**Will you kindly advise me through your columns what you estimate the pressure of gas must be to penetrate 3,100 feet of water now standing in a 6-inch hole? Also will you please state the approximate volume of gas that must be present?—J. C. B.**

Your question is somewhat vague, but an effort will be made to answer according to what it is believed you intend to ask.

As the conditions about which you have written, are interpreted by this department, there is a hole 3,100 feet deep which tops a gas-bearing formation at that depth. The hole is full of water and gas is bubbling from the water at the top. The gas is presumably coming from the gas-bearing formation which you say is 3,100 feet deep.

You want to know what the gas pressure must be and what volume of gas must be present for this to occur.

If pure water were standing in the well the pressure in pounds per square inch on the gas-bearing formation would be $3{,}100 \times 0.434 = 1{,}345$, and the pressure of salt water would approximate 1,450, but this does not mean that the gas pressure would be so high. Remember that the gas is not supporting the column of water but is merely bubbling up through it. It is quite common to find gas bubbling up through water standing in an old abandoned dry hole that has filled with water even though there was not enough gas or oil to pay to operate the well. The gas probably enters the well by diffusion through the water in the formation around the well.

It is not possible to tell you what the gas pressure is. The fact that gas is bubbling up through the water indicates nothing quantitatively as to either pressure or volume of gas in the gas-bearing formation. If salt water, or salt water together with oil, were being flowed from the well by gas pressure, then it would be possible to calculate the pressure and measure the volume of gas with reasonable accuracy. The pressure required to flow this well must be in excess of the water pressure.

## AS TO SHALLOW PRODUCTION

**Where can I get information regarding shallow production, that is, some book of articles dealing with this phase of the industry? Also where can I get full information about royalty buying, that is, how to make a purchase, the approximate amount required as a down payment and the terms on wildcat, semi-proven, and proven acreage? Where can I get information on how to read a geological map?—C. W. S.**

This department does not know of any books or papers that deal primarily with shallow production. This phase of production engineering is included in all of the good text books upon petroleum engineering and production methods. Some of these are listed as follows: "A Text Book of Petroleum Engineering," by Lester C. Uren, McGraw-Hill Book Co., New York; "Principles of Oil Production," by Johnson and Huntley, John Wiley & Sons, Inc., New York; "A Handbook of the Petroleum Industry," by David T. Day, John Wiley & Sons, Inc., New York.

You are also referred to a paper which was given at the May 17 meeting of the Eastern Division of Development and Production Engineering of the American Petroleum Institute at Bradford, Pa., entitled, "Small Field Economies." This paper is especially applicable to shallow production.

In reply to your question about full information upon royalty buying, it is believed your best move will be to become acquainted with those in the royalty business. The royalty business, like many others, is a highly specialized occupation requiring keen judgment and foresight based upon experience. It can not be learned from books. Prices of royalties vary all the way from a few cents per acre up to many thousands of dollars per acre depending upon the character and location of the properties, the interests involved and many other factors. One can not say how much you will have to pay down for a royalty interest or what the total cost will be any more than he can give you that information for a city lot regardless of its location. It is believed, however, that you will do well to read the book entitled, "Business of Oil Production," by Johnson, Huntley and Somers, published by John Wiley & Sons, Inc., New York.

For information upon the interpretation of geologic maps you are referred to the following books: "Practical Oil Geology," by Dorsey Hager, McGraw-Hill Book Co., New York; "Handbook for Field Geologists," by C. W. Hays, John Wiley & Sons, Inc., New York; "Geology of Petroleum," by W. H. Emmons, McGraw-Hill Book Co., New York.

You should also write to the director of the United States Geological Survey, Washington, D. C., for further information upon this subject. Many of the Geological Survey bulletins contain valuable information upon this subject.

## COST OF COMPRESSION PLANT

**Can you give me some average cost figures on compression plants for repressuring oil properties, also can you tell me the cost per 1,000 cubic feet of air injected into an oil sand?—S. L. G.**

The costs in which you are interested depend largely upon the locality and the conditions to be met on the individual properties. It is customary to estimate the cost of compression plants on a horsepower basis. These costs include iron building and piping. They average from $100 to $125 per horsepower.

The cost of compressed air delivered at the key wells varies according to the items included in the costs. If we include operating costs, depreciation, and interest on the investment, the average cost per thousand cubic feet of compressed air delivered at the key wells ranges from 3 cents to 6 cents. Most companies engaged in this work report costs of 4 cents or 5 cents per thousand cubic feet.

## LAYOUT FOR GAS MAIN

**Could you let me know something about the general layout of a typical natural gas main installation of 50 miles in length or more, giving the size of pipe used, pressures carried at inlet and outlet of transmission line, number of boosters in the line and the drop in the pressure at inlet of booster and the pressure at which the gas is again boosted?—C. C. B.**

There are so many types of layouts, with their individual modifications, that it would be impracticable to attempt to give you here the information you seek. You would do well to get in touch with some gas company, having, in a general way, the sort of layout you have in mind, and then study that layout.

## EARLY GEOLOGISTS

Please refer to your answer to D. I. S. in the October 11 issue of The Oil and Gas Journal. If you will read "Petrolia," one of the earliest books on the petroleum industry, you will find that geologists were employed consistently before 1870. This book is one of the most interesting books on the early history of the oil business.—A. K.

## STATEMENT IS QUESTIONED

**In the issue of The Oil and Gas Journal of October 4, 1928, page 29, under the caption "Repressuring Bowlegs Pool, Seminole," J. L. Dwyer states that in the "killed well" No. 7 Goforth the gas was sent down under a pressure of 150 pounds. Does this mean a pressure of 150 pounds at the casinghead or at the bottom of the hole? If this means at the casinghead what becomes of the theory circulated among the operators that the natural rock pressure at the casinghead must be overcome before any quantity of gas can be expected to penetrate the oil sand at the bottom of the hole? The writer is not informed as to the rock pressure of the wells in the Seminole Pool but as they are over 4,000 feet deep, the writer estimates the rock pressure over 1,000 pounds. Assuming the rock pressure 1,000 pounds would it not have to be 1,150 pounds at the casinghead in order to put 150 pounds in the sand at the bottom of the hole? If Mr. Dwyer is correctly quoted in assuming 150 pounds only is required to push gas into sand 4,000 feet deep, it is important to producers contemplating repressuring sands in the deeper areas as they would not have to install expensive high pressure machinery and equipment in their experiments. If you will enlighten me on this subject through your column in the Journal, it will be appreciated.—C. F. N.**

There are only a few points to be covered in a reply to your question. In the first place the initial rock pressure in the Seminole Pool was exceedingly low and rarely was enough to flow the wells naturally. Consequently the air-gas lift method was used to flow them. This initially low rock pressure has been depleted further, so that now it is not necessary to apply high pressures to the injection wells. If the pressure in the oil sand were anything near 1,000 pounds to the square inch at this time it would not be necessary to repressure the sand. Injection of air or gas into an oil sand at such high pressures would be more in the nature of maintenance of pressure.

## CENTRAL PUMPING POWER

**What are the principal considerations influencing the choice of location for a central pumping power?—W. W. D.**

There are numerous considerations that enter into the choice of location for a central pumping power. Topographic conditions, that is the lay of the land, water supply, haulage conditions, and other items of cost and convenience are all important. It is customary to locate central powers as near as possible to the "center of gravity" of the wells to facilitate balancing and also to minimize the length of the lines. Swings and dummies can be used to balance a limited off center location of the power. The use of double eccentrics is good practice where it is not convenient to locate a power with respect to the center of gravity of the wells.

The principal considerations are listed as follows:

1. Balanced load.
2. Shortest average length of rod lines.
3. Straightness of rod lines to eliminate swings and turns.
4. Topographic conditions.
5. Water supply.
6. Type of central power to be used.

For your further information you are referred to United States Bureau of Mines Bulletin 224, "Surface Machinery and Methods for Oil Well Pumping," by H. C. George. A copy of this bulletin can be obtained, at nominal cost, from the superintendent of documents, Government Printing Office, Washington, D. C.

## KENTUCKY-TENNESSEE

(Continued from Page 82)

"Dutch" Tompkins lease in the Brown Pool. Same parties are putting down a test on the Hansford farm, also close to the Tompkins lease in Daviess County.

Percy Jolly, of Cleveland, Ohio, is drilling a wildcat on the Paul Wethington farm at Browns Valley, in Daviess County far from production.

The Eastern Gulf Oil Co. is installing a large power plant in Daviess County to hook up six wells on the Ruby and Murray leases, in the Red Hill Field, and expects to connect up the wells on the Mayfield lease of the company. This power plant as well as the company's rigs are fueled by gas from the leases, which is in abundance, making a big saving in fuel bills. The power can handle 25 wells. James C. Ellis has 27 wells hooked to one power in the Ambrose Pool.

The W. M. S. Oil Syndicate is drilling No. 5 on the C. M. Field, in the Hayden Pool, in Daviess County. Pratt Brothers are drilling No. 2 on the George B. McCamish farm. Guy Hazel and others are drilling No. 3 on the Hazel Miller-Aud, in the Knottsville area.

## CENTRAL WEST FIELDS

(Continued from Page 70)

ship, Pulaski County, and about 1½ miles southwest of Francisville, is down close to the Niagara lime, but shut down on account of the drillers spending a few days at their home in Woodville, Ohio. This well is about one-half mile away from an old gas well drilled to the Trenton sand many years ago in the town limits of Francisville. The hole still stands near the top with crude.

**Indiana Oil and Gas Report**

Development work report compiled by T. M. Kingsbury, State Gas Supervisor, Department of Conservation, Division of Geology, Indianapolis, Ind., reads as follows by counties:

Crawford County—The well on the E. W. Jones farm southeast of Birdseye being drilled by Henderson Brothers and others is down 1,102 feet. The drillers are undecided whether to drill deeper or plug back and shoot the well at about 350 feet where a showing of oil was encountered. Considerable leasing is taking place in this area.

Gibson County—The Roxana Petroleum Corp. drilled its first well in Indiana on the Manford Corn farm, Section 22, Columbia Township, about 3 miles west of Oakland City. It came in as a 5,000,000-foot gas well at 1,413 feet, but the supply decreased rapidly. The well was drilled to 1,422 feet and a test showed 30 to 35 bbls. of oil per day. This well is in new territory and another well will be drilled as soon as arrangements can be made. William Bell and others got a dry hole on the L. Dillon farm, Section 7, Washington Township, at 1,590 feet. Enlow and others are drilling No. 2 on the John Enlow farm in Section 15, Montgomery Township.

Grant County—E. Hayes and others, drilling on the Gardner farm, Section 6, Monroe Township, got a dry hole.

Greene County—It is reported a well has been started on the Ad Wright farm near Linton and that the rig has been completed.

Harrison County—T. J. Heaton, of the Laconia Fuel & Bi-Products Co., a new company in this county, reports a good gas well on the Alonzo Brown farm, east of Tobacco Landing. This company is now drilling on the Harvey Conrads farm and the Kerth farm.

Jay County—Milligan and Rice got a nonproducer in their well in Bear Creek Township, about 7 miles northeast of Portland.

Jasper County—The well drilled by J. L. Eggleston and J. F. Denny and others on the Bailey farm of the Hoosier Gardens Co., Section 5, Barkley Township, south of the old Gifford Pool, was abandoned at 1,010 feet when Blue Lick water was encountered.

LaGrange County—James W. Hunt has started drilling No. 2 on the Ira Chrystler farm, Clay Township, about 3 miles northwest of LaGrange. The first well on this farm, completed last fall, encountered gas at 895 feet but was drilled about 60 feet deeper without further success.

Marshall County—The test well on the Frank Lawson farm drilled by the Arco Oil & Gas Co., east of Plymouth, is reported to have encountered oil which was drowned out by salt water at 1,460 feet. This well got some gas at 600 feet.

Monroe County—The Saddle Creek Oil Co., in another attempt to locate commercial production in the southeastern part of the county, is drilling on the John Fox farm, Section 35, Clear Creek Township. The well is below 700 feet.

Perry County—No report has been received on the progress of the well started several months ago on the L. E. Peckinpaugh farm, Troy Township. A showing of oil was encountered at about 500 feet but at 600 feet the tools were lost and the well has been temporarily abandoned.

Randolph County—It is reported an oil well has been brought in near Winchester, but no detailed information has been received.

**Pike County Work**

Pike County—H. C. Darby and others got a 25-bbl. well on the Russell Kime farm, Section 26, Logan Township. The top of the sand was 1,314 feet. No. 2 on this farm has been started. In the southeastern corner of the county, Phipps and Blosser are drilling for the Hurst Oil Co., on the Willehellima Martin farm. This well was reported last month as being in Dubois County near Holland. It is in new territory, being 7 miles southeast of production. Perry Andrews is also drilling a test well 3 miles southwest of Petersburg on the David Wuertz farm. It is now 800 feet deep. The Gem Oil Co. drilled in a shallow gas well on the A. Yeager, Section 9, Monroe Township.

Pulaski County—The Michigan-Indiana Oil & Gas Co. is drilling a test on the Bennett Taylor farm, Section 17, Salem Township, southeast of Francisville. The well is about 650 feet deep.

Rush County—The Rushville Gas Co. has completed three good gas wells southeast of Rushville.

Spencer County—The Universal Oil Co. abandoned the well on the Forest Bell farm, Section 20, Clay Township, and plan to move the rig 1½ miles east for a second test. The Fred Butler well west of Grand View was temporarily abandoned at 750 feet but drilling has recently been resumed. George F. Elliott brought in his second producer southwest of Rockport on the J. G. Haines farm which is north of the first well on the Stutsville farm. It made 10 bbls. and top of the sand was 987 feet. Plans have been made to drill two more wells in this area. One and one-half miles north of the Haines well, Orville Martin, trustee, has started a well on the James Martin farm. No. 2 on the J. Ban Richardson farm, Section 28, Luce Township, has been started by the Wiser Oil Co. to test the sand above the "Little Lime," in which a good showing was encountered in the first well but which could not be tested because of tools lost in the hole.

Steuben County—The well being drilled by B. O. Reynolds and others on the Peter Snowberger farm, Steuben Township, just north of Ashley, is down about 700 feet.

Sullivan County—The test well on the Madison Drake farm, just east of Fairbanks, being drilled by Myers and others, is down 1,975 feet. In the Siosi Pool, the Siosi Oil Co. got a 10-bbl. well in No. 4 on the F. I. Williams lease, Section 5, Fairbanks Township, and the W. C. Kennedy Co. got a light producer in No. 3 on the Cora M. Willis lease, Section 12.

Vanderburg County—Trusler and Ventz are drilling on the George Kraft farm, Section 3, Armstrong Township. Last month this well was reported as being started on the Dunn farm. In the same township, L. A. Martin Co. is down about 400 feet in a test on the John Willis farm, Section 32.

Vigo County—The Ohio Oil Co.'s No. 3, on the W. F. Collins farm, Section

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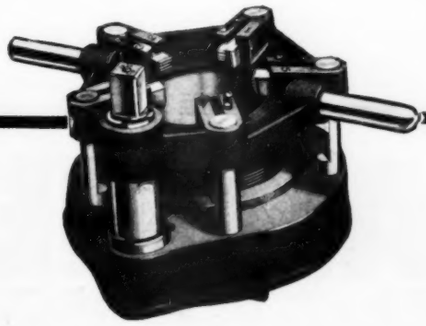

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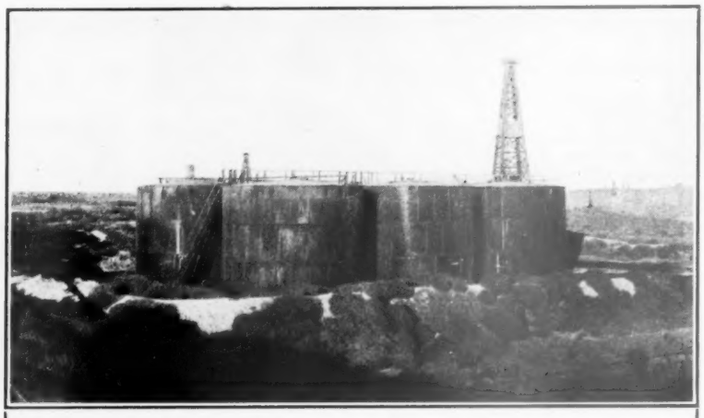

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31, Prairie Creek Township, encountered oil and water at 2,196 feet and was abandoned. The Siosi Oil Co. has completed Nos. 14 and 15 on the William Riggs farm, reported to be two of the best wells in the pool. Nos. 16 and 17 wells are being drilled on this farm. This company's No. 3 on the F. I. Williams farm, an offset to the Shattuck No. 1, made 30 bbls. at 2,243 feet.

Warrick County—The test on the J. R. Lang farm, Section 35, Anderson Township, 8 miles south of Boonville, drilled by Finke and Ziegler, was abandoned at 1,230 feet. The Morrison Oil Co. is drilling on the White farm, 2 miles southeast of Chandler and Kerns. Folsom and others have started a test on the John Scales farm, 3 miles west of the Gentry Pool.

Warning—T. M. Kingsbury, state gas supervisor, Department of Conservation, states as follows: "Please remember to send logs of all wells drilled in the State to this office at Indianapolis, Ind. This is required by a department regulation. Also report leaking or abandoned wells. Such wells are a violation of the State law and must be repaired or plugged for the protection of near-by producing wells and surrounding areas that might be drilled in the future."

### Illinois

Two nice producers were recorded from the Allendale Field, in Wabash Township, Wabash County, Illinois, and it looks as though that field would come back again. South of Allendale, G. W. Miller and others' No. 3 well, 200 feet from the south line and 600 feet from the east line of the W. M. Price, in the southwest quarter of Section 14, Wabash Township, topped the sand at 1,575 feet and at 5 feet in the sand produced an initial of 90 bbls. the first 24 hours. Joe S. Young, Jr., and others' test in the southeast corner of the L. G. Stillwell farm, in the southwest quarter of Section 12, same township, found top of sand at 1,425 feet and at a total depth of 1,442 feet produced an initial of 85 bbls., indicating that there is still territory worth drilling in the once active area. The Highland Oil & Gas Co. did not do as well in a test drilled in the northwest corner of the George Green farm, in the southwest quarter of Section 4, same township, which proved dry at a total depth of 1,610 feet.

In Crawford County, Southwest Township, the Silurian Oil Co.'s second well in the southwest corner of the Lloyd Mann farm, in the southwest quarter of Section 13, shows close around 2,000,000 feet of gas and 20 bbls. of oil at a depth of 1,492 feet. This will encourage development work in that area. In Honey Creek Township, Edward Kerlin in drilling a test on the M. O. Southers farm struck a nice shallow gas pay and concluded to go no farther with the hole as the gas could be used in further development of the lease for fuel purposes. This well is in Section 17, and in the northwest corner of the lease. In Oblong Township, the Dinsmore Oil Co.'s No. 7, in the southeast corner of the O. B. Kirtland farm, Section 8, proved a duster.

## EASTERN FIELDS

(Continued from Page 67)

jun sand. In the same district, M. F. Crowley has a gasser in the Salt sand at No. 4 on the W. F. Seales farm. In Center district, Park Bowser has a very light pumper in the Berea grit at No. 11 on the David Matthess farm. In Geary district, Roane County, the United Carbon Co. has a gasser in the Salt sand at a second test on the Michael Harold farm.

#### Starting Test Wells

In Jefferson district, Pleasants County, the Southern Oil Co. has made the location and moved in a drilling machine to a location on the T. N. Barnsdall farm. In Washington district, Dinsmoor & Co. are drilling on the J. E. Barrett farm. One mile from production in McKim district, Howard Hall and others are drilling a test on the L. C. Fleming farm.

On Elk River, Big Sandy district, Kanawha County, the United Fuel Gas Co. has a rig completed on the Swan, Goshorn & Brown tract. In the same district, at the mouth of Leatherwood Run, the United Fuel Gas Co. has started to drill on the Morrison farm. In the same district, the same company has the rig completed on the King Land Co.'s tract. In Carroll district, Lincoln County, the Cambridge Gas Co. is building a rig on the Adam King farm. In the same district, Meabon & Huffman are rigging up on the J. W. McClennahan farm.

On Elk River, Big Sandy district, Kanawha County, the United Fuel Gas Co. has the rig completed for a second test on the King Land Co.'s tract. On the same river, the same company has the rig completed for a test on the Queen Land Co.'s property. In Sheridan district, Calhoun County, the Conservative Oil & Gas Co. has rig material at a location on the C. J. Domas farm. In Scott district, Boone County, Earl Cameron is building a rig on the L. R. Griffith farm.

#### Lincoln County

In Jefferson district, Lincoln County, Earl Cameron has a rig up on the Golden Stone farm and roads made to locations Nos. 2 and 3. In Union district, the United Fuel Gas Co. is rigging up on the John W. Thomas farm. In Chapmanville district, Logan County, W. G. McCorkle and others are rigging up on the Edward Garrett farm. In Union district, Ritchie County, the Pittsburgh & West Virginia Gas Co. is building the road to a location on the Pickard Brannon farm, and has a rig up on the E. W. Summers farm.

In Sherman district, Calhoun County, Godfrey L. Cabot has the rig completed for a test on the Lula Meadows farm. This location is 1,500 feet in advance of production. In Grant district, Ritchie County, the Mid Penn Oil Co. is rigging up to drill from the Salt sand to the Big Injun an old well on the A. F. Daubenspeck farm. On Little Indian Creek, Murphy district, Ritchie County, the South Penn Oil Co. is spudding in a test on the Berthena Michaels farm. On Elk Run, Big Sandy district, Kanawha County, the United Fuel Gas Co. has a rig up on the Brown, Swan & Goshorn tract. The location is 1,900 feet east of the test on the Hannah Cox farm. In Union district, Wood County, the Oil City Trust Co. has moved a drilling machine to a location for No. 5 on the Harbrank-Knapp heirs' farm. In Walker district, the Pleasant Hill Gas Co. has moved a drilling machine to a second location on the Mary Marshall farm.

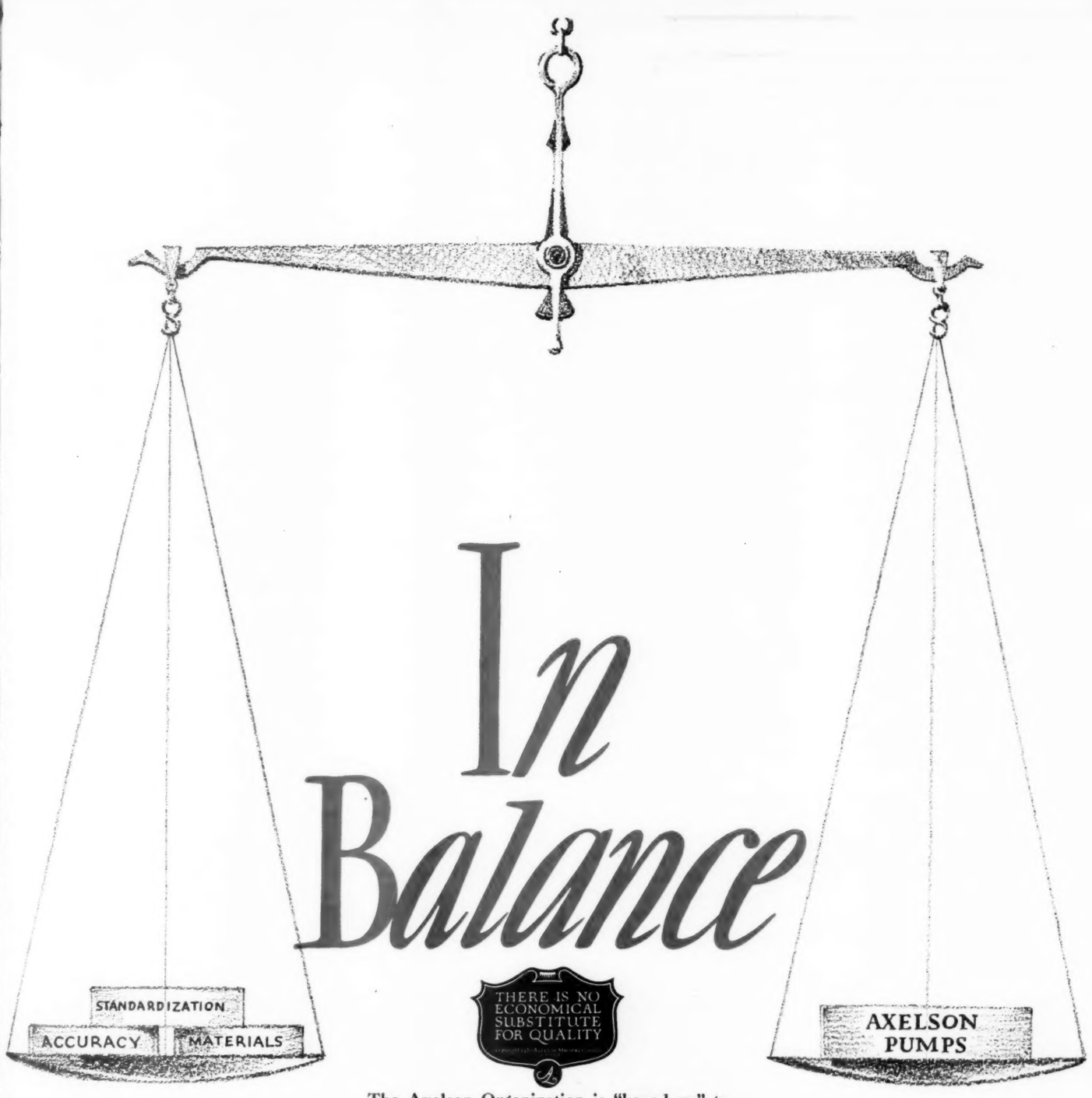
### Southwest Pennsylvania

In Perry Township, Greene County, the B. & N. Oil & Gas Co. has a 5-bbl. pumper in the Big Injun sand at No. 4 on the Floyd Hedlee farm. In Dunkard Township, the Oliver Oil & Gas Co. has completed No. 18 on the J. R. Sicklesmith farm. It is a light pumper in the Dunkard sand, total depth 735 feet.

In the old McDonald district, Allegheny County, Shafer Brothers & Co. have completed an 8-bbl. pumper on the H. Shafer farm. In Marshall Township, Newhart & Co. have a rig up on the H. E. Pinkerton farm. In the same township, the Warrendale Oil Co. is drilling a second test on the Heil farm. In Plum Township, the Unity Oil Co. is due in the sand at a test on the Joseph Cohen farm. In the same township, the Edgewater Steel Co. is drilling a second test on its own property.

In West Deer Township, James Morris has a gasser at a test on the McIntyre heirs' farm. In Buffalo Township, Butler County, near the Allegheny County line, the Phillips Oil & Gas Co.'s test on the John Harvey farm, has declined to 18 bbls. a day.

In Morris Township, Greene County, J. B. and C. C. Nuss, trustees, drilled in a second test on the Mrs. Ella Ray and others farm last month. It had an initial production of 35 bbls. from the 3d foot sand. It was given a shot and its production increased to 55 bbls. a day.

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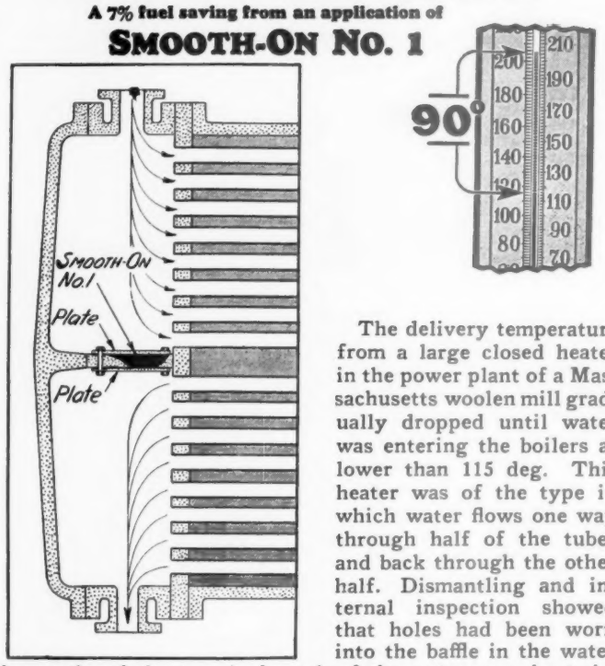


The delivery temperature from a large closed heater in the power plant of a Massachusetts woolen mill gradually dropped until water was entering the boilers at lower than 115 deg. This heater was of the type in which water flows one way through half of the tubes and back through the other half. Dismantling and internal inspection showed that holes had been worn into the baffle in the water box end and the travel of much of the water was short-circuited.

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## WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

**McLAIN COUNTY**

Empire Oil & Ref. Co.'s No. 1 Bonner, SE cor. NW NW Sec. 29-5-3 ..... Location.

**MUSKOGEE COUNTY**

Elk Drilling Co.'s No. 1 Jones, SW cor. SW Sec. 34-13-17 ..... Shut down 400 ft.
L. T. Haney's No. 1 Mitchell, SE cor. NW SE Sec. 33-13-18 ..... Shut down 2,290 ft.
J. L. Slusher's No. 1 Nave, NE cor. SW NW Sec. 20-15-20 ..... Shut down 450 ft.

**HUGHES COUNTY**

Galt-Brown Oil Co.'s No. 1 Burrey, C NW NE Sec. 14-4-9. Dry and abandoned 4,101 ft
Bauer and others' No. 1 Penn, NW cor. SW NE Sec. 1-8-10 ..... Sand 2,842-50, 8,000,000 ft. gas flowing salt water; underreaming casing.
Noble Oil & Gas Co.'s No. 1 Wickett, SE cor. SE Sec. 20-5-9 ..... Dry and abandoned 3,015 ft.
E. W. Whitney and others' No. 1 Moore, SE cor. SW Sec. 17-5-9 ..... Drlg 2,420 ft.
Pure Oil Co.'s No. 1 Fixico, NE cor. SW Sec. 18-8-9..... Drlg. 4,061 ft.
Howard Petroleum Co.'s No. 1 Gilbert, NW cor. SE Sec. 25-8-10 ..... Shut down 3,120 ft.
Gypsy Oil Co.'s No. 1 McGirt, NE cor. NW SW Sec. 21-6-8 ..... Sand 3,310-30 ft., corrected, hole full water.
T. B. Slick, Inc.'s No. 1 Epperly, NW cor. NE NW Sec. 32-6-8 ..... Dry in Wilcox, 4,655 ft., plugging back.

**OKLAHOMA COUNTY**

Slick & Bailey's No. 1 Koester, C SE NE Sec. 18-13-3w. Shut down 4,510 ft.
Cromwell & Franklin's No. 1 Thompson, SW cor. NE NE Sec. 15-12-3w ..... Drlg. ahead 6,966 ft.
Cromwell & Franklin's No. 1 Gross, SW cor. NE SW Sec. 22-10-2w ..... Dry and abandoned 4,702 ft.
Indian Terr. Ill. Oil Co.'s No. 1 fee, C SE SE Sec. 24-11-3w ..... Drlg. 5,620 ft.

**OKFUSKEE COUNTY**

Moose & Daniels' No. 1 Stidham, SW cor. NW Sec. 4-11-10 ..... Shut down 622 ft.
Dixie Oil Co.'s No. 1 Drew, NE cor. SW Sec. 8-13-10.... Drlg. 2,165 ft.

**SEQUOYAH COUNTY**

Cooper & Badger's No. 1 Young NW cor. NE NE Sec. 7-12-20 ..... Shut down 440 ft.
Hunt and others' No. 1 Unknown, SE cor. NW SW Sec. 12-12-23 ..... Shut down 635 ft.

**PAWNEE COUNTY**

Washoma Oil Co. and others' No. 1 Buffalo, SE cor. NE Sec. 33-22-5 ..... Drlg. 3,162 ft.

**POTTAWATOMIE COUNTY**

Phillips-Atlantic's No. 1 Winrow, SW cor. NE NE Sec. 11-9-4 ..... Rig.
Superior Oil Co.'s No. 1 Herminghausen, SW cor. NW NE Sec. 24-8-2 ..... Drlg. 4,912 ft.
Pure Oil Co.'s No. 1 Lindley, SE cor. SW SE Sec. 18-8-5.. Simpson sand 4,098-4,115 ft.; completed, pinched in.
T. B. Slick's No. 1 Sailor, SE cor. NW NW Sec. 12-8-3... Location.
Roxana Pet. Corp.'s No. 1 Deister, NW cor. SE NE Sec. 20-6-5 ..... Dry and abandoned 4,271 ft.
T. B. Slick and Roxana Pet. Corp.'s No. 1 Hurst, SE cor. NW NW Sec. 17-7-2 ..... Shut down for water 5,041 ft
Tomlinson et al's No. 1 Whisenhurst, NW cor. NE SE Sec. 35-7-5 ..... Drlg. 4,010 ft.
Phillips Petroleum Co.'s No. 1 Parman, SE cor. SW Sec. 15-8-4 ..... Drlg. 4,556 ft.
Champlin Refining Co.'s No. 1 Foster, SW cor. NE SW Sec. 14-7-5 ..... Drlg. 2,310 ft.

**CADDO COUNTY**

Magnolia Petroleum Co.'s No. 1 Shelby, SW cor. SW Sec. 28-10-12w ..... Shut down 4,312 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w.. Shut down 160 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w ..... Shut down 3,394 ft.
English Drilling Co.'s No. 2 Pruitt, CNL NW SE Sec. 22-6-10w ..... Rigged up and shut down
Red Bank Oil Co.'s No. 1 Shanklin, C NW Sec. 15-12-11w. Drlg. 4,562 ft.

**OSAGE COUNTY**

Amerada Pet. Co.'s No. 1, NE cor. SW, Sec. 25-25-6 ..... Shut down 2,840 ft.
White Eagle Oil & Ref Co.'s No. 1, SE cor. NE Sec. 26-26-6 ..... Location.

**STEPHENS COUNTY**

Wade-Martin & Smythe's No. 1 Vestal, NE cor. SE Sec. 20-2-5w ..... Dry and abandoned 2,510 ft
Stahl & Burris' No. 1 Jefferson, SE cor. NE NW Sec. 2-1-7w ..... Drlg. 1,305 ft.

**SEMINOLE COUNTY**

Prairie Oil & Gas Co.'s No. 1 Davis, NE SE Sec. 21-10-7.. Fishing 3,350 ft.
Superior & Fuhrman's No. 1 Fay, NW cor. SE SW Sec. 27-11-6 ..... Drlg. 4,560 ft.
Magnolia Pet. Co.'s No. 1 Germany, SE cor. NW Sec. 20-9-5 ..... Drlg. 4,016 ft.
Phillips Pet. Co.'s No. 1 Miller, NW cor. SW Sec. 34-11-7 ..... Rig.
Burke-Greis Oil Co.'s No. 1 Cyrus, SE cor. NE NW Sec. 13-9-7 ..... Drlg. 2,260 ft.
Harris et al's No. 1 Stidham, SE cor. NW Sec. 30-9-8.... Drlg. 3,315 ft.
T. B. Slick's No. 1 Wood, NE cor. NE SW Sec. 25-7-6.... Wilcox 4,650-65 ft.; water.
C. B. Shaffer's No. 1 Carolina, SE cor. SW NE Sec. 4-6-7.. Drlg. 4,702 ft.
E. W. Whitney's No. 1 Harjo, NE cor. NW NE Sec. 26-7-6 ..... Plugged back 4,325 ft. and shut down.
Gypsy Oil Co.'s No. 1 Andrews, NE cor. SW NW Sec. 27-10-7 ..... Rig.
Shaffer Oil & Ref. Co.'s No. 1 Catchochee, SW cor. SW NE Sec. 18-10-7 ..... Wilcox 4,705-10 ft. hole; hole full water; plugging back to Cromwell sand, and set 5-inch casing 3,730 ft.
Prairie Oil & Gas Co.'s No. 1 Rogers, SE cor. NE SE Sec. 14-10-6 ..... Dry and abandoned 4,715 ft
T. W. Adkins' No. 1 Reed, NE cor. NW Sec. 2-8-8 ..... Rigging up.
T. B. Slick, Inc.'s No. 1 Tiger, NW cor. SW SE Sec. 13-8-5 ..... Drlg. 1,650 ft.
Magnolia Petroleum Co.'s No. 1 Sissy, SW cor. NE Sec. 32-8-7 ..... Drlg. 3,940 ft.
McCulloch Oil Co.'s No. 1 McGilbray, SW cor. SW NE Sec. 4-8-8 ..... Rigging up.
Empire Gas & Fuel Co.'s No. 1 Harjo, SW cor. NW SE Sec. 17-7-6 ..... Drlg. 4,021 ft.

**MAJOR COUNTY**

Randau & Mooney's No. 1 Parker, SE cor. NE NW Sec. 4-23-16w ..... Show of oil 1,235 ft.; shut down

**WOODS COUNTY**

E. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w ..... Rig.

**MURRAY COUNTY**

Bison Oil Co.'s No. 1 Labor, NW cor. NW Sec. 17-1-2.... Drlg. 1,410 ft.

**DEWEY COUNTY**

Huckaby & McCoy's No. 1 Perfect, NE cor. NE Sec. 9-18-15w ..... Fishing 4,345 ft.
Don Sifers' No. 1 Jordan, SW cor. NW Sec. 16-16-17w.... Spudded and shut down.

**BECKHAM COUNTY**

C. & H. Petroleum Co.'s No. 1 Barnes, SW cor. NW NE Sec. 32-9-22w ..... Shut down 3,460 ft.
Martin et al's No. 1 Cluck, NW cor. SE. Sec. 1-8-25w.... Spudded.
L. C. Hivicks' No. 1 Davis, C NW NE Sec. 4-11-26w.... Shut down 350 ft.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w ..... Drlg. 2,510 ft.
Pferffel and others' No. 1-A Carter, NE cor. NE Sec. 25-9-22w ..... Shut down 1,500 ft.
Day Oil Co.'s No. 1 Ault, NW cor. NW Sec. 23-8-21w.... Spudded.

**GRADY COUNTY**

Remington and others' No. 1 Fryrear, SW SW NE Sec. 13-9-5w ..... Shut down 720 ft.
Dave Malernee's No. 1 Hall, SE cor. NW SW Sec. 8-3-7w. Dry and abandoned 3,502 ft.

Commercial Development Co.'s No. 1 Chrisman, C NE NE Sec. 21-4-7w ..... Dry and abandoned 3,360 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w .... Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-6-8w ..... Rig.
Commerce Development Co.'s No. 1 Taylor, C NE NW Sec. 4-3-7w ..... Testing sand 2,410-21 ft.
J. B. Nichols' No. 1 Brake, SE cor. NE SE Sec. 7-5-7w .. Shut down 2,307 ft.

**M'INTOSH COUNTY**

Marlone Oil Co.'s No. 1 Sanders, NW cor. NE SW Sec. 10-9-18 ..... Drlg. 2,560 ft.
Patterson et al's No. 1 Smith, SW cor. NW SE Sec. 32-9-16 ..... Shut down 5,451 ft.
Wolfe et al's No. 1 Unknown, NW cor. SE Sec. 15-12-18.. Rig on ground.

**CLEVELAND COUNTY**

Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w ..... Shut down 3,130 ft.

**KIOWA COUNTY**

Blue Mountain Oil Co.'s No. 1 Jones, SE cor. NW NW Sec. 17-5-14w ..... Shut down 530 ft.
Johnson & McDowell's No. 1 Thompson, SW cor. NE Sec. 6-6-15w ..... Shut down 1,725 ft.
Dave Malernee's No. 1 Van Kirk, NW cor. NW Sec. 35-7-15w ..... Shut down 858 ft. in granite.
A. C. Varner and others' No. 1 Bonham, CSL NW NW Sec. 5-6-18w ..... Shut down 1,127 ft.

**CUSTER COUNTY**

W. E. Witts' No. 1 Wellman, C SE Sec. 1-14-14w ..... Rig and tools.

**PONTOTOC COUNTY**

Moore & Curran's No. 1 Allen, SE cor. SW SW Sec. 23-5-5 ..... Shut down 1,460 ft.
C. J. Shervin and others' No. 1 Wright, NW NE NE Sec. 13-4-6 ..... Wilcox corrected 3,565-70 ft.; dry and abandoned.
Roxana Pet. Corp.'s No. 1 Folsom, NW cor. SW Sec. 20-4-4 ..... Drlg. 800 ft.
Boles and others' No. 1 Rayburn, SW SE Sec. 35-4-6..... Lost underreamer; abandoned at 1,340 ft.
Texas Pacific Coal & Oil Co.'s No. 1 Stewart, C SW NE Sec. 11-5-8 ..... C.O. 2,435 ft.
American Oil Refining Co.'s No. 1 Jones, NE cor. NE Sec. 18-5-5 ..... Drlg. 1,900 ft.
Douglas Oil Co.'s No. 1 Sutton, C NW NW Sec. 10-3-8 ... Dry and abandoned 3,165 ft.

**GARVIN COUNTY**

R. F. Garland's No. 1 Strickland, SW NW SW Sec. 10-4-3 ..... Drlg. 2,980 ft.
Dixie Oil Co.'s No. 1 Perkins, SE NW Sec. 15-4-1..... Dry and abandoned 6,455 ft.

**COMANCHE COUNTY**

Jolly-Ogg Oil Co.'s No. 1 Neeley, SE NE Sec. 24-3-10w.. Dry and abandoned 3,014 ft.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w.. Drlg. 3,926 ft.
Wirt Franklin Pet. Co.'s No. 2 Holler, NW cor. NW Sec. 2-4-11w ..... Rig.

**COAL COUNTY**

McGraw and others' No. 1 Patton, SW SE NE Sec. 35-1-8 ..... Wilcox 4,770-93 ft., dry, plugging back to show oil 1,790 ft.
Indian Territory Illuminating Oil Co.'s No. 1 Harris, SW cor. NW Sec. 10-1-11 ..... Drlg. 4,175 ft.
Robert Galbreath and others' No. 1 Jones, SW cor. SE Sec. 24-1-9 ..... Drlg. 1,175 ft.

**JACKSON COUNTY**

Altus Oil Co.'s No. 1 Northington, NE cor. NE Sec. 4-1-20w ..... Shut down 735 ft.

**SOUTHERN OKLAHOMA**
**BRYAN COUNTY**

Green Oil & Ref. Co.'s No. 1 Kemp, SE cor. NW NW Sec. 28-8s-9 ..... Abandoned 600 ft.
Alexander & Oppenheimer's No. 1 Hampton, SE cor. NE Sec. 26-7s-11 ..... Shut down 1,425 ft.

**MURRAY COUNTY**

Gilcrease Oil Co. and Mohawk Drilling Co.'s No. 1 Wolfe, SE cor. NE Sec. 20-1-2 ..... Dry and abandoned 1,984 ft.
Alter and others' No. 1 Johnson, SW cor. NW Sec. 14-4-7. Spudded and shut down.

**COTTON COUNTY**

Cuyler & Pyson's No. 1 Thomas, SE cor. SE SW, Sec. 16-4-12w ..... Spudded and shut down.
G. E. Crane et al's No. 1 Montgomery, C NW NE Sec. 33-2s-9w ..... Drlg. 3,510 ft.

**JEFFERSON COUNTY**

M. Mitchim's No. 1 Newcomb, SW cor. SE SE, Sec. 5-5-4w ..... Dry and abandoned 2,534 ft.
Fritz et al's No. 1 Barrett, C SE SE Sec. 5-6S-7w ..... Drlg. 930 ft.
Amerada Petroleum Co.'s No. 1 Emerson, NW cor. SE SW Sec. 28-5s-8w ..... Shut down 4,516 ft.

**CHOCTAW COUNTY**

Hugo Gray's No. 1 Smith, SE cor. SW NW Sec. 27-6s-16.. Dry and abandoned 1,540 ft.
Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19 ..... Shut down 1,346 ft.

**TILLMAN COUNTY**

Bray and others' No. 1 Barker, NE cor. SW NW Sec. 9-1-15w .....
A. J. Bundy's No. 1 Hayster, NE cor. SW SE Sec. 23-2-17w ..... Dry and abandoned 630 ft.
Dixie Oil Co.'s No. 1 McKinney, NE cor. NE Sec. 29-3s-18w ..... Location.
A. N. Pearson's No. 1 Mounts, SW cor. SW Sec. 3-5s-15w. Dry and abandoned 2,015 ft.
Stanley & McGregor's No. 1 Mock, NW cor. NW SW Sec. 33-1-20w ..... Shut down 1,641 ft.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w ..... Shut down 2,485 ft.

**STEPHENS COUNTY**

Clark & Cowden's No. 1 Watkins, SE cor. NE SW Sec. 22-2-7w ..... Dry and abandoned 2,500 ft.

**JOHNSTON COUNTY**

Wapanucka Oil Co.'s No. 1 Banks, Sec. 28-2s-9 ..... Shut down 1,530 ft.
Bush Creek Oil Co.'s No. 1 Kirby, SE cor. NE NW Sec. 9-4-7 ..... Shut down for casing 405 ft.
Smith & Kinsley's No. 1 Lane, SE cor. NW Sec. 29-1-7... Drlg. 1,080 ft.
Wirt Franklin Pet. Co.'s No. 1 Wilkes, SW cor. SE Sec. 18-4-4 ..... Dry and abandoned 4,505 ft.
Wirt Franklin Pet. Co.'s No. 1 Foster, CNL NW SW Sec. 35-4-4 ..... Dry and abandoned 1,375 ft.

## KANSAS WILDCATS

(Continued from Page 44)

Mid-West Exploration Co.'s No. 36 Furthmer, SE cor. SE Sec. 25-12-16w ..... Rig.
Phillips Pet. Co.'s No. 1 Shultz, C NE Sec. 5-12-17w..... Drlg. 2,965 ft.
Mid-West Exp. Co.'s No. 1 Austin, NE cor. NE Sec. 36-12-16w ..... Drlg. 3,060 ft.
Marland Oil Co.'s No. 1 Vine, SW cor. SW SE Sec. 27-11-19w ..... Drlg. 1,025 ft.
Stearns & Streeter's No. 1 Plummer, NW cor. SE Sec. 2-11-17w ..... Drlg. 3,125 ft.
T. B. Slick, Inc.'s No. 1 Craig, C NW NE Sec. 8-11-16w.. Drlg. 2,800 ft.

**EDWARDS COUNTY**

Amerada & Wilcox' No. 1 Teansil, C NW SW Sec. 32-25-19w ..... Drlg. 3,320 ft.

**GEARY COUNTY**

Pioneer Oil Co.'s No. 1 Chase, SE cor. SE Sec. 10-12-7.... Fishing 3,250 ft.
Wright et al's No. 1 Younker, NW cor. NE Sec. 17-11-5... Drlg. 1,074 ft.

**GRAHAM COUNTY**

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-26w ..... Drlg. 1,620 ft.

**GREENWOOD COUNTY**

Bisagno et al's No. 1 Gilroy, NW cor. SW SW Sec. 8-25-13 ..... Dry and abandoned 1,642 ft.
P. H. Ballew's No. 1 Bright, NE cor. SW Sec. 22-27-12... Shut down 1,210 ft.
Ladow Gas Co.'s No. 1 Lawrence, SE cor. SW SE Sec. 4-27-13 ..... Dry and abandoned 1,630 ft.
Ward McGinnis' No. 1 Robbins, NE cor. NW Sec. 16-24-9.. Drlg. 1,465 ft.
Hanley et al's No. 1 Peterson, NW cor. NE SE Sec. 4-26-13 ..... 1,000,000 ft. gas, 1,528-31 ft.; completed.

**HARPER COUNTY**

Amerada Pet. Corp.'s No. 1 Mendiville, C SE SE Sec. 24-34-6w ..... Drlg. 5,362 ft.


# FLAGG

MALLEABLE FITTINGS MANUFACTURERS SINCE 1854

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STEAM WATER

GAS OIL

## RED RING FLANGE UNIONS

Ground Joint—*Brass to Iron Seat*

All "RED RING" flange unions are carefully tested and inspected, and being made of *Furnace-Refined* malleable iron, are always dependable.

The opening through the seats is larger than the outside diameter of the pipe hence protruding pipe cannot injure the seat.

"RED RING" Flange Unions are heavier and in most sizes have more bolts than other flange unions of similar type.

FLAGG "KEYSTONE" Extra Heavy

Line Pipe Thread

Brass to Iron Seat

NATIONAL TYPE 800 Pound Test

*These two Flange Unions are furnished in Cast Iron but can be made in Malleable Iron.*

FLAGG PRODUCTS

MALLEABLE IRON FITTINGS
*Standard—Extra Heavy*
EXTRA HEAVY REFINERY AND OIL LINE FITTINGS

CAST IRON FITTINGS
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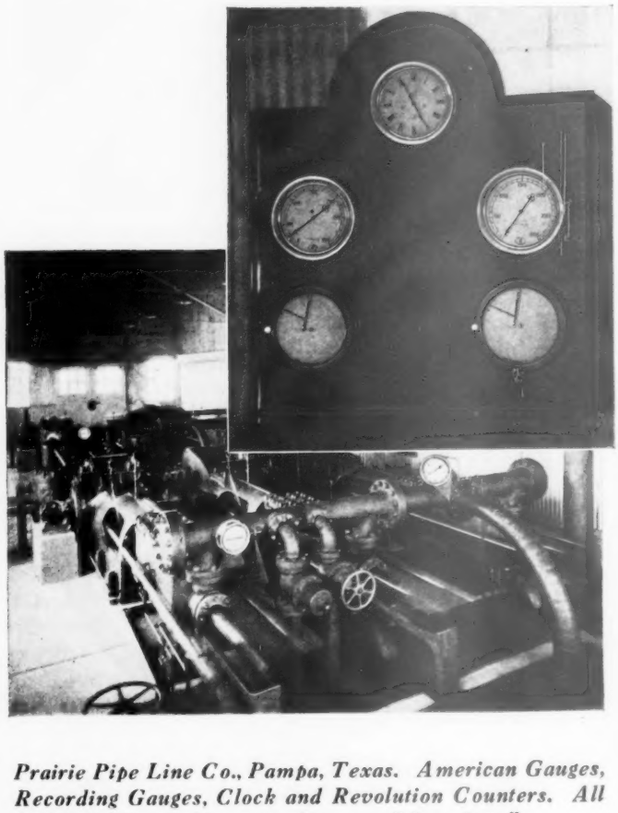
# GAUGE BOARDS



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**AMERICAN INSTRUMENTS**

SINCE 1851

**CONSOLIDATED ASHCROFT HANCOCK CO. INC.**
**AMERICAN SCHAEFFER & BUDENBERG DIVISION**
338 Berry Street Brooklyn, N.Y.
Branches in Principal Cities


**HARVEY COUNTY**

R. S. Austin's No. 1 Nieman, SW cor. SW Sec. 21-24-2.... Drlg. 1,720 ft.

**JEFFERSON COUNTY**

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ..... Rigged up and shut down.

**JACKSON COUNTY**

Garvin & Morton's No. 1 Lutes, SW cor. NW NW, Sec. 27-7-15 ..... Shut down 940 ft.

**MARSHALL COUNTY**

Irwin et al's No. 1 Cooper, NE cor. NW Sec. 10-3-7 ..... Drlg. 620 ft.

**MARION COUNTY**

Prairie O. & G. Co.'s No. 1 Theis, NW cor. NW Sec. 151-9-4 ..... Dry and abandoned 2,715 ft.
Empire Oil & Ref. Co.'s No. 1 Burhart, SE cor. NE NE Sec. 11-20-3 ..... Rig.
J. E. Hauna's No. 1 Pankratz, NE cor. NE SW Sec. 13-20-3 ..... Rig.
Courtney B. Davis' No. 1 Rampel, SE cor. NE SE Sec. 7-19-3 ..... Chat 2,424-52 ft.; spray oil and 8,000,000 ft. gas.
A. E. Meyers, No. 1 Papp, SW cor. SW NE Sec. 10-18-2.. Rig.
Raymond Gear's No. 1 Larson, NW cor. SW NW Sec. 18-21-4 ..... Drlg. 2,415 ft.
Empire Oil & Ref. Co.'s No. 1 Siebert, SW cor. SE Sec. 28-20-2 ..... Sand 2,425-2,427 ft. 1,500,000 ft. gas, shut in.

**MEADE COUNTY**

Blackwell O. & G. Co.'s No. 1 Beyer, SE cor. NW SE Sec. 9-33-28w ..... 500,000 ft. gas and 2 bailers water total depth 4,356 ft.

**MITCHELL COUNTY**

Ben Gurley et al's No. 1 Crombll, C NE NE Sec. 32-9-7w ..... Drlg. 3,550 ft.

**MORRIS COUNTY**

Hugh Faulder's No. 1 Wendt, SW cor. SE SE, Sec. 18 15-5 ..... Spudded.
Skelton et al's No. 1 Ilea, NW cor. NW Sec. 25-16-5 .... Rig.
O'Day et al's No. 1 Scott, NE cor. SW Sec. 6-16-6 ..... Rig.

**McPHERSON COUNTY**

Galt-Brown's No. 1 Blaine, C NE Sec. 18-17-1w ..... Drlg. 3,362 ft.
John Heron's No. 1 Vosshell, NE cor. NE Sec. 9-21-3w... Shut down 500 ft.
Larlaux et al's No. 1 Martinson, NE cor. SE Sec. 9-19-3w. Rig.
McPherson Gas Co.'s No. 1 Stein, SW cor. NE SW Sec. 17-18-1w ..... Drlg. 1,529 ft.
McPherson Gas Co.'s No. 1 Gustafson, C NE Sec. 9-17-2w ..... Drlg. 1,637 ft.
W. C. Newman's No. 1 Diepenbrock, NW cor. NE Sec. 2-17-1w ..... Drlg. 2,780 ft.
Vickers Pet. Co.'s No. 1 Wedel, C SW Sec. 12-20-2w..... Rig.

**OSAGE COUNTY**

York State Oil Co.'s No. 1 Smith, SE cor. SW NW Sec. 18-18-15 ..... Drlg. 1,020 ft.

**OSBORNE COUNTY**

F. C. Johnston's No. 1 Cooley, C NW NE Sec. 15-8-15w... Drlg. 2,912 ft.
L. D. Jarvis No. 1 Jellison SE cor. SE Sec. 13-10-15w.... Spudded and shut down.

**OTTAWA COUNTY**

Anderson et al's No. 1 Bank, NE cor. NW Sec. 28-10-2w.. Shut down 2,450 ft.

**PAWNEE COUNTY**

F. C. Troupe's No. 1 Lovett, CEL NE NE Sec. 31-21-16w. Shut down 1,560 ft.

**PHILLIPS COUNTY**

Watsonian Oil Co.'s No. 1 Marklein, NE cor. SW Sec. 21-3-19w ..... Drlg. 1,720 ft.

**RENO COUNTY**

Empire and Marland's No. 1 Williams, SE cor. NE Sec. 5-26-4w ..... Dry and abandoned 4,144 ft.

**RICE COUNTY**

Allison & Fitzwilliams' No. 1 Poland, NE cor. SW NE Sec. 36-19-8w ..... Cellar.

**ROOKS COUNTY**

Phillips Pet. Co.'s No. 1 Overholtzer, C SE Sec. 30-9-16w. Drlg. 3,120 ft.
Empire G. & F. Co.'s No 1 Woodrill, NE cor. SE NW Sec. 15-8-18w ..... Drlg. 3,156 ft.
Krueger et al's No. 1 Poore, NE cor. NE Sec. 14-8-16w... Drlg. 1,911 ft.
Burford & Brimm's No. 1 Toxa, NE cor. SW SE Sec. 22-19-17w ..... Spudded and shut down
Krueger et al's No. 1 Poore, NE cor. NE Sec. 14-8-16w. Drlg. 2,730 ft.
Skelly & Mid-West's No. 1 Jones SW cor. NE NW Sec. 28-7-16w ..... Shut down 3,485 ft.

**RUSH COUNTY**

Danciger Valerius & Chenney's No. 1 Schuerman, NW cor. SE NW Sec. 27-17-17w ..... Show oil 3,341 ft.; drlg. ahead at 3,357 ft.
Sinclair Oil & Gas Co.'s No. 1 Berching, NW cor. NE NW Sec. 9-16-16w ..... Shut down 704 ft.

**RUSSELL COUNTY**

Douglas Oil Co.'s No. 1 Stoppel, SE cor. SW NE Sec. 25-14-11w ..... Dry and abandoned 3,505 ft.
Gypsy Oil Co.'s No. 1 Cook, C NE SE Sec. 10-13-15w..... Sand 3,246-70 ft., show oil, under reaming to drill deeper.
Stearns & Streeter's No. 1 Haise, NE cor. SE SE Sec. 36-12-15w ..... Shut down top Oswalt lime 2,970 ft.
Joe Liggett's No. 1 Maier, SE cor. NE SE Sec. 8-11-15w.. Top Oswalt 3,016 ft.; drilling at 3,120 ft.

**SALINE COUNTY**

M. Esty et al's No. 1 Peterson, C NE Sec. 6-16-5w..... Spudded and shut down
Boyle et al's No. 1 Miller, SW cor. SE Sec. 21-16-1w..... Drlg. 710 ft.
Nathan Jones et al's No. 1 Robertson, NW cor. SW Sec. 27-14-2w ..... Shut down 1,500 ft.

**SEDGWICK COUNTY**

Bu-Vi-Bar Pet. Co.'s No. 1 Wright, SE NE SE Sec. 12-26-1w ..... Sand 3,367-68 ft., flowing 1,700 bbls. daily.
Bu-Vi-Bar et al's No. 1 Roberts, SE cor. SW Sec. 1-26-2w ..... Rig.
J. H. Tatlock et al's No. 1. Goeldnea NW cor. NE Sec. 6-29-2e ..... Drlg. 817 ft.
La Robb Oil Co's. No. 1 Davis SE cor. SE Sec. 36-25-1w.. Rig.
Maglason et al's No. 1 Buckles, NW cor. SE Sec. 3-28-1w. Shut down 250 ft.
Barnsdall Oil Co.'s No. 1 Faber, SW cor. NW Sec. 6-27-1w ..... Spudded.
Connell & Slick's No. 1 Cross, NE cor. NE Sec. 27-25-1w.. Rig.
Allison & Fitzwilliams' No. 1 Doane, NE cor. NW NE Sec. 24-26-1w ..... Drlg. 2,916 ft.
VanZant & Mason's No. 1 Fox C NW SW Sec. 19-25-1w.. Spudded.
Barnsdall Oil Co.'s No. 1 Samuels, NE cor. NW Sec. 24-25-1 ..... Drlg. 715 ft.
Marland Prod. Co.'s No. 1 Goodrich, SW cor. NE SW Sec. 16-25-1 ..... Rig.

**SEWARD COUNTY**

W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-33w ..... Drlg. 1,213 ft.
McKanna et al's No. 1 Haun, SE cor. NE Sec. 10-33-33w.. Drlg. 1,035 ft.
T. B. Slick's No. 1 Pyle, NE cor. NE Sec. 14-33-33w..... Shut down 5,005 ft.

**SHERMAN COUNTY**

A. L. Henson et al's No. 1 Murry, NE cor. SE NW Sec. 22-7-40w ..... Shut down 3,035 ft.

**STEVENS COUNTY**

Trees Oil Co.'s No. 1 Thompson C NE SW Sec. 3-35-38w.. Casing trouble 600 ft.

**SUMNER COUNTY**

McCulloch Oil Co.'s No. 1 Teettle, SW cor. NE Sec. 29-34-1w ..... Drlg. 557 ft.
Gypsy Oil Co.'s No. 1 Williams, NW SE SW Sec. 16-35-3w ..... Drlg. 2,980 ft.
Helmerich & Paynes' No. 1 Warlick, SE cor. NE Sec. 8-34-2 ..... Drlg. 1,965 ft.
Otstot et al's No. 1 Barlow, SE cor. SE Sec. 22-33-3w.... Wilcox 4,479-4,482 ft. show oil and gas.
George Dickey's No. 1 Knox, SW cor. NE Sec. 3-35-1w... Underreaming 2,985 ft.
Otstot et al's No. 1 Volker, NW cor. NE Sec. 9-35-1..... Rig.
Davidson and others' No. 1 Strickland, SW cor. SE Sec. 12-35-1w ..... Rig.
Sam Jarvis' No. 1 Warneke, SE cor. SW Sec. 4-34-3w... Drlg. 4,575 ft.

**TREGO COUNTY**

Central Commercial Oil Co.'s No. 1 Ellis, NE cor. SW NE Sec. 20-13-21w ..... Drlg. 1,920 ft.

**WASHINGTON COUNTY**

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3.. Rig.

## ROCKY MOUNTAIN AREA

(Continued from Page 53)

of oil in shales, oil sands, oil springs and seeps, asphaltum beds, and veins of gilsonite, elaterite and other petroleum residue. Obscure surface geological features have offered some difficulties in working out structures, but the Pleasant Valley structure is said to be one of the clearly defined Tertiary structures that have been mapped. Erosion has exposed a strip of oil sand extending about 12 miles east and west, which shows up from a quarter to a mile in width with a thickness of approximately 30 feet or more. The Farnsworth well was drilling in this sand at 75 feet. This saturated sand is described as an oil pool when under cover and testing is considered equivalent to drilling a proven field for a deeper pay. The General Petroleum Corp. of California has a one-third interest in the acreage held by the Utah Southern. Interest in the Tertiary beds in eastern Utah and Idaho and western Colorado and Wyoming is steadily on the increase and is attracting a number of California operators familiar with the enormous production obtained in this formation on the Pacific Coast.

### Cane Creek

The Utah Southern Oil Co.'s No. 1-A J. L. Shafer, Section 36-26-20, on the Cane Creek Dome in Grand County, joint with the Moab Consolidated Oil Co., which encountered blue shale at 2,046 feet, has penetrated the shale at 2,088 feet at which depth the hole is bottomed on a lime shell. The horizon is making considerable gas. The 8¼-inch has been run to the lime shell where it was mudded and a test is being made. So far no salt has been encountered in this test although it is 200 feet deeper than where the salt was found in the discovery well on the top of the dome half a mile to the south. The Utah Southern Oil Co.'s No. 1 King, Section 13-23-20, on the Salt Valley structure, jointly with the Moab Consolidated, is drilling at 1,545 feet in the Pennsylvania lime and has had several shows of oil since passing out of the red beds at 1,020 feet. At 1,478 feet in fractured black lime it got heavily saturated salt water containing considerable cut oil. The well is only 1,300 feet from the salt contact, but so far has not cut any salt beds.

The Ashley Valley Oil Co.'s No. 1, Section 22-5-22, in Uinta County, is running the 8¼-inch casing at 1,350 feet to shut off water in the upper Morrison. The Diamond Oil Co.'s No. 3, Section 29-8-5, on the Buskirk Dome in Utah County, is drilling at 1,605 feet and is believed to be close to a sand. The Continental Oil Co.'s Boundary Butte test on Section 23-43-22, in San Juan County, is bottomed at 4,050 feet, 3 feet below old bottom where it was held up for five months with a fishing job. Rig is being repaired before resuming. This is a Pennsylvania test. It had a show of 25 bbls. per day in the Shinarump at 1,590 feet. The Navajo Petroleum Co. of California is moving a standard rig from New Mexico to Section 12-35-24, in San Juan County, where it expects to be ready to spud before winter sets in. This location is not far from the Boulder Knoll Oil & Gas Co.'s No. 1 Endter, Section 17-34-25, which is shut down at 2,640 feet waiting for 6¼-inch casing. This well is showing considerable gas through salt water. The Phillips Petroleum Co.'s No. 1 Shick, Section 16-27-6, Barrier Creek Dome, in Wayne County, has resumed at 3,550 feet at which depth the 8¼-inch was cemented. The Signal Petroleum Co. of Long Beach has taken over the Sandburg Oil Co.'s test on Section 7-21-19, on the Crescent Dome in Grand County and will resume as soon as a shipment of 10-inch casing arrives. The Sandburg interests drilled the well to 2,475 feet some time ago. The Dakota is expected at 3,000 feet.

## Colorado

Colorado furnished little news of interest this week outside of the routine. The Midwest Refining Co. listed two of its wells on the Iles Dome in Moffat County as completions. Its No. 4-SD Shaw, NE NW NE, Section 27-4-92, was drilled 3 feet into the Sundance sand at 3,423-26 feet and completed temporarily as a 300-bbl. well after shutting off the Morrison sands which gave considerable trouble from water intrusion. Its No. 8-SD-2 Parkinson, NW NW, Section 23-4-92, also is listed as a completion in the Morrison at a total depth of 3,337 feet with an initial production of 205 bbls. This leaves the Midwest with two drilling wells on the Iles Dome, its No. 24-SD Parkinson, SE NW, Section 22-4-92, drilling in shale at 900 feet, and its No. 3-SD Shaw, NE NE, Section 27-4-92, drilling at 2,967 feet in blue and green sandy shale. The Texas Production Co. has only one well drilling, its No. 36 Lloyd, SE cor. Section 21-4-92, which commenced spudding October 17 and is now bottomed at 285 feet. On the Moffat Dome, the Texas Production Co.'s No. 5 Wick, Section 10-4n-91, the only drilling well on that structure, is bottomed at 4,596 feet and fishing. This is a test to the Sundance which has been drilled on this dome in only one other well.

The news from the Phillips Petroleum Co.'s No. 1 Haskins, NE NE, Section 23-29-56, on the Red Rocks structure in Las Animas County in southeastern Colorado is not very encouraging. This test has been tied up with a fishing job at 2,575 feet for about three months. The formations cut so far have not offered anything of an encouraging nature and the contractors have had more than the ordinary lot of bad luck. The contract called for a 3,500-foot hole, but it does not look as if that depth can be made and even if the difficulties could be overcome there is a question whether it would be worth while to continue. The test is on acreage held by the Reiter-Foster Oil Co. and the Texas Production Co. has an interest under an agreement to contribute dry hole money. If satisfactory arrangements can be made between the interested parties, it is probable the hole will be abandoned at this depth. It was intended as a test of the Pennsylvania horizons, but these beds do not appear to conform.

### Bent County

In Bent County, in southeastern Colorado, the Marland Production Co.'s No. 1 Pipe Springs, Section 27-27-49, is drilling in lime at 3,780 feet. The lime was topped at 3,710 feet, the red beds being considerably thicker than was expected.

In El Paso County, the Grand Union Oil Co.'s No. 1, Section 19-17-67, on the Red Creek Dome, has resumed at 1,630 feet after changing over from rotary to cable tools. It had a good showing in the red beds at this depth. The objective is the Embar of Pennsylvanian age, this horizon being expected at around 2,700 feet.

The McDeb Drilling Co.'s No. 1 Fitzsimmons, Section 7-4s-66, near Aurora in Arapahoe County, is shut down at 3,660 feet after setting the 8¼-inch at that depth and is awaiting the arrival of a new cable.

In Huerfano County, south of the Florence Pool in Fremont County, the Parker Club, Inc.'s, No. 1 fee, Section 4-28-68, on the Badito-Alamo structure, joint with the Kinney-Coastal Oil Co., is running the 12½-inch casing at 1,210 feet to shut off cavy ground. The hole is bottomed 341 feet in the Pierre shale, a formation that generally stands up in good shape, and rapid progress is expected from now on. The first objective is the Apache sand which is expected at between 2,300 and 2,400 feet. A good show, amounting to 6 inches of oil on top of the water in the bailer, was encountered in the top of the Pierre at 885 feet.

In Archuleta County, the Juanita Oil Co.'s No. 1 Harvey, Section 4-32-3w, on the Juanita structure, is drilling below 600 feet in a 3,000-foot test with standard tools.

### La Plata County

In La Plata County in the southwestern part of the State the Royal Producers & Royalty Co.'s No. 1, SE NE, Section 27-33-12, on the Red Mesa structure, commenced spudding on October 15. Frank A. Webber, a former superintendent for the Midwest Refining Co., is in charge of operations. This well is about midway between the old Leidecker and Erdman wells, both of which had some showings and the logs of which were used in spotting the new test. The objective is the Dakota expected at around 4,000 feet. The Childers Drilling & Producing Co.'s No. 1 Dozier, Section 29-33-13, on the Barker Dome, is shut down at 820 feet, but is expected to resume shortly as the company is reported to have been successful in doing some financing in the East. The Detroit Oil Association's No. 1 Olbert, Section 9-35-12, is reported shut down at 1,823 feet.

The Florence-Canon City district in Fremont County had no completions this week and only one new well was started, this being the Continental Oil Co.'s No. 3 McKenzie, SW SE NW, Section 1-19-70.

The Texas Production Co.'s No. 4 Belle Dennis, Section 7-6n-86, on the Tow Creek Dome in Routt County, a test to the Sundance sand below the Morrison and Dakota, is drilling at 3,896 feet. This company's No. 5 Henry Dennis, NW cor. Section 17-6-86, commenced spudding on October 18.

### Jackson County

In Jackson County near the Wyoming line the Producers & Refiners Corp.'s No. 1 Hendershot, Section 2-6n-86, Pole Mountain area, is bottomed at 1,830 feet and running the 12½-inch. This test is reaching an interesting stage. It entered the Pierre shale at 940 feet and the 15½-inch was cemented at 942 feet. The Pierre in that area is much thinner than on the eastern slope and is estimated at not to exceed 500 feet which probably means that the hole is now in the upper Niobrara and that the Dakota may be expected somewhere between 3,000 and 3,500 feet.

On the Hiawatha Dome in Moffat County the Ohio Oil Co.'s No. 1 State, SE cor. Section 16-12-100, is drilling at 2,580 feet with a hole full of water. The drill is now working below the horizon in which oil or gas was expected. This well was drilled to 2,240 feet by the Reiter-Foster Oil Co. and was then taken over by the Ohio under a lease agreement to deepen. Water sand at 2,174-2,215 feet was not believed to be the horizon in which gas was found in other wells on the structure and this resulted in the decision to drill deeper with the results noted. The state well is three-fourths of a mile northwest of the Ohio's big gas well, Kuykendall No. 1, NE cor. SE, Section 22-12-100.

## Wyoming

Recent developments in the R. H. Rosenberg well on the NE NW NW, Section 25-58,98, on the Frannie structure in Park County, Wyoming, near the Montana line, indicates this discovery is more important than first indicated. This well encountered a sand at 2,588 feet last August and came in as a producer opening new black oil pool. It was deepened to 2,600 feet and completed and flowed better than 125 bbls. per day after being tubed. It was then shut in until arrangements could be made for marketing the oil. Recently it was put on production and in the first week averaged better than 350 bbls. per day. Of far more importance than the increase in production is the belief now after checking the cuttings with other wells in the Big Horn Basin that the production is not coming from the true Embar sand, which has not yet been tested, if this theory is correct, but from a stray sand above the Embar. The cuttings have been compared with the logs of the Utah Southern Oil Co. and Ohio Oil Co. wells on the Garland Dome and correlate with a sand found about 50 feet above the Embar in these wells which carried gas, but which has never produced oil in that region. This indicates that the Embar, which is several hundred feet thick, and the Tensleep, the producing horizons at Oregon Basin, have not yet been drilled at Frannie and opens the possibility for big production with deeper drilling. The Frannie Pool is on the Chicago, Burlington & Quincy Railroad and the shipping of the oil was no problem. The oil is being shipped to the Maple Leaf refinery at Coutts, Alberta. The oil tests 28.6 degrees and compares with 24 gravity for the Oregon Basin crude.

The Frannie structure was mapped by C. T. Lupton, consulting geologist of Denver. Mr. Lupton has spotted two locations, one to the northwest and the other to the southeast of the discovery. The structure is practically controlled by three men, Dr. Ralph Arnold, Charles A. Mau and R. H. Rosenberg, a Los Angeles capitalist. Lpton showed his faith in the structure by acquiring extensive royalty interests. The dome comprises about 3,300 acres, but a large outside area has been leased by others and plans for several wells are under way. Doctor Arnold described this discovery as being the key to exploration of upward of 50 structures in south central Montana in an area covering 20,000 square miles in which the log of the Frannie well checks closely with many of these structures.

### Sage Creek Test

The Producers & Refiners Corp. is one of the first to begin drilling in the immediate neighborhood of the Frannie well, its No. 1, NE NE, Section 7-57-97, now drilling at 295 feet in hard black sand making 8 bailers of water. This test is on another structure known as the Sage Creek, or South Frannie. The Oregon-Wyoming Oil & Gas Co. is drilling the Horse Center structure in this county in its No. 1, NE SW, Section 30-52-101, which is making hole at 715 feet. The Ohio Oil Co. has a near discovery in its No. 1 Pulley, NW NW, Section 27-52-101, 3 miles from Cody, but is having bad luck in completing it. Fluid had risen 2,000 feet in the hole at 4,752 feet in the top of the Embar and the 4¾-inch was set at that depth before drilling in. A bend at the bottom of this string kept the tools off bottom and efforts to pull the string have not been successful. A smaller string of tools probably will be run in an effort to test the sand which gives strong indications of opening another black oil pool. Another wildcat getting under way in that area is the Texas Production Co.'s No. 1, NW SW, Section 23-45-100, on the Skelton Dome in Hot Springs County, which has commenced spudding. This, however, is a light oil test.

In the Oregon Basin Field in Park County drilling operations are at a rather low ebb pending the outcome of efforts to get the operators together under an agreement to restrict drilling and prorate runs. The Cody Petroleum Co.'s No. 5 Klindt, NE cor. Section 7-51-100, is drilling at 3,390 feet, and its No. 6 Klindt, NE NE, Section 7, is drilling at 1,760 feet. Same company's No. 1 Garner, on the west side in SW cor. NE, Section 27-51-101, is drilling at 2,400 feet. The Wisconsin Holding Co.'s No. 2 Rousch, Section 9-51-100, has a hole full of water at 2,200 feet. The Wyoming Western Oil Co.'s No. 3 Hough, SE SE, Section 18-51-100, is drilling at 1,960 feet and the Ohio Oil Co.'s No. 6 Sonners, NW cor. Section 8-51-100, is drilling in the bottom of the Embar at 3,460 feet.

### Fremont County

Fremont County and the Wind River Basin is expected to have a considerable play by the wildcatters as a result of the bringing in of two new structures in that county recently by the Texas Production Co. on the Alkali Butte Dome and the Producers & Refiners Corp. on the Muskrat Dome. The Alkali Butte well in the SE NW, Section 1-33-95, has been plugged back to 4,175 feet to test production from the Muddy at 3,978 feet. Before drilling deeper this horizon flowed as much as 600 bbls. per day. Since plugging back it has not yet come up to its former record, but is improving. First day it flowed 47 bbls. and was followed by an increase, the latest report being 100 bbls. A further increase is expected as soon as the channels are opened up for the oil to come in. The Producers & Refiners well was shut in as a big gasser.

One of the more important wildcats to be drilled in that county was announced this week. This is the Parker Club, Inc., and the Kinney-Coastal Oil Co.'s No. 1 Dykeman, SE SW, Section 22-3n-1w, in the Pilot Butte Field 35 miles northwest of Riverton. Material is being moved to location and it will be a deep test to the Sundance sand expected at 4,100 to 4,500

feet. Pilot Butte has been producing oil for many years from the equivalent of the Shannon sand at 600 to 900 feet, this oil being shipped to Riverton through the Illinois Pipe Line Co.'s line. In 1925 the Argo Oil Co. drilled a test on the NW NW, Section 27-3n-1w. It had good shows of oil and gas, but was abandoned at 3,205 feet when the hole had been reduced to 2¾ inches and water made its appearance. The source of this water was not definitely determined and there is a question as to whether the first sand in the Dakota was reached. The lower Dakota, Morrison and Sundance sands were not tested. The Kinney-Coastal company had acreage on the structure and made a deal recently with the Argo company whereby it acquired control of the structure. A deal was then made with the Parker Club people for a deep and thorough test. The Dakota sand is expected at around 1,000 feet shallower drilling than it was found at Alkali Butte. The plans provide for the testing of all shows as the hole is drilled and plenty of time will be taken for exploring the different horizons.

**Carter's Deep Test**

In Johnson County north of Salt Creek, the Carter Oil Co.'s deep test on Section 20-48-82, on the west side and down from the top of the Billy Creek Dome, is drilling at 3,700 feet and has not yet picked up the Frontier which was expected before now. It had a little gas at 3,550 feet and the 6¼-inch was set at 3,554 feet.

The Utah Southern Oil Co.'s No. 3, Section 29-56-97, on the Garland Dome in Big Horn County, a test to the Embar and Tensleep horizons which are productive at Oregon Basin, is standing at 3,763 feet while an examination and comparison of samples is being made to determine whether to drill deeper or release the well for a test. It topped the Embar at 3,255 feet and encountered gas. The pressure increased with deeper drilling until it tested 1,400 pounds. The gas has been held back with a heavy fluid while hole was drilled deeper, oil colors showing at the lower horizons.

In Weston County in the northeastern area the Allen Oil Co.'s No. 1, Section 15-44-64, on the Howard Dome, is drilling at 3,800 feet and believed to be very close to the Frontier. It has had some shows of oil and gas.

In Niobrara County, the only active wildcat is the Buck Creek Oil Co.'s No. 1 Hattie Peterson, Section 30-37-62, which is drilling at 4,257 feet. An oil sand topped at 3,928 feet which tested 175 bbls. was cased off to drill to lower sands. Horizons showing oil and water have been encountered below that sand.

In Carbon County the Producers & Refiners Corp.'s No. 1, Section 14-25-89, on the Sherrard Dome has finished installing bradenhead. It had a flow of 22,000 bbls. of water from gray sand at 2,082 feet. The hole was deepened to 2,091 feet and the 10-inch run, the 12½-inch being at 1,790 feet.

California operators continue to acquire holdings in southwestern Wyoming. The Sunset-Coastal Oil Co. is reported to have acquired acreage in Section 19-14-118, on the Aspen Mountain structure adjoining the lease in which E. L. Doheny recently became interested, and George F. Getty, Inc., is reported negotiating for Sections 24 and 26-14-119. The Western American Petroleum Co. of Los Angeles, has secured a block in the Spring Valley district.

**Sublet County**

In Sublet County, the California Petroleum Co. is reducing its operations in the La Barge Field in anticipation of the coming of winter and has only two strings running. It will maintain that schedule until spring. The company is installing a heating plant for the treating of the oil during the winter to facilitate its shipment through the pipe line. The Circle Oil Co.'s No. 1, NE SE, Section 8-27-113, is a completion and is rigging up to pump. It is estimated at 40 bbls. W. D. Newlon's No. 1, SW Section 12-26-113, is a gas well at 1,946 feet, the open flow being estimated at 20,000,000 feet. It is not only the largest gas well in that area but is particularly important as it comes from a greater depth than the gas found in other wells. The California Co.'s No. 2 Bushell, Section 11-29-115, Snyder Basin, is shut down for the winter at 2,067 feet.

In Sweetwater County, the Producers & Refiners Corp.'s No. 1, Section 26-20-104, North Baxter Basin, is still in sand (probably Lakota) at 3,465 feet. At 3,440 feet the sand was making 10,000,000 feet of new gas. The Ohio Oil Co.'s No. 1 Humphreys, SW cor. Section 2-12-101, Canon Creek Dome, has spudded and is drilling at 425 feet. The Tower Petroleum Co.'s No. 1, Section 31-15-103, Baxter Basin, is bottomed at 4,580 feet and carrying the 6¼-inch. It had some wet gas at 4,550 feet. The Prairie Oil & Gas Co. has commenced spudding on Section 13-17-104, central Baxter Basin.

## Montana

The compilation of the oil produced in Sunburst Field during September shows a decided increase over the production for the month of August.

September's total is 286,716 bbls., and August had a total of 274,746 bbls., the difference being 11,970 bbls., or a daily increase of 691 bbls.

This increase was due to the finding of the new pool by the Hibbing Faunce No. 6 in Section 1-34-2, which is still holding up around 700 bbls. daily. Two new wells will shortly reach the Ellis sand in this new pool and tell something of its area. These are the Hibbing Faunce No. 7 and the Peerless No. 3 on the Steele lease. Both wells will be in the pay by the middle of the week with good luck.

On Section 24-35-2, in the Sunburst Field, the Clara Oil Co. is a good producer of 100 bbls. daily. This well made 90 bbls. with the swab and 110 bbls. on the pump. The Dakota Dubuque well on Section 29-35-2, is also a good producer around 50 bbls. daily. The Texas Pacific Oil Co.'s No. 5, on Section 29-35-2, came in a gasser and is making around 4,000,000 feet daily from the Sunburst sand. This well was then drilled down to the Ellis and found oil there so that it is making about 25 bbls. daily from the contact with the gas production. The Sunburst Oil & Refining Co. completed a producer on the Atkinson lease that will make around 4,000,000 feet daily and this will be utilized in supplying gas for the pipe line to Great Falls.

**Wildcat East of Shelby**

A wildcat drilling about 3 miles east of Shelby, Section 10-31-1, is another effort to extend the Sunburst Field to the south. While many such have failed in the past there is considered that a chance exists in the area where this well is located for an arm of the field to extend southward and leases in that vicinity are being held for high prices. The well is being drilled by William Mahan and associates who are well known in Sunburst.

The Bi-State Oil & Gas Co. found a duster on Section 6-34-1. This well found the Ellis sand and a showing of oil that was thought good enough to make a small pumper, however, it was abandoned and plugged as the cost of operating would be heavier than the oil obtained.

In southern Montana, Carbon County, the Ohio Oil Co.'s deep test on the Dry Creek Dome, has a fishing job at 4,467 feet and is a commercial producer as it stands. This well has a gas production of about 11,000,000 feet and the hole has filled up about 500 feet with oil.

In the same district, about 6 miles north of Frannie Dome in Wyoming, the White Oil Co.'s well has been taken over by Dave Hills and will be drilled through the Frontier sands. This well was reported abandoned at 2,500 feet but the new agreement places it in the drilling column again. The White Oil Co.'s well is across the line in Montana.

**Pondera Field**

In the Pondera Field, the Ohio Oil Co.'s No. 4 Hirschberg, on Section 22-27-4, was shot and the well looks good for 100 bbls. This well found the pay at 1,995 feet or a little higher than the average for the field. The Continental Oil Co. has a producer on the Wheeler lease in its No. 2 well, Section 14-27-4, and after two shots will do about 40 bbls.

The Texas Pacific pipe line is carrying production from Pondera as fast as the line will permit at this time. The past week this line brought about 7,500 bbls. to Conrad and this oil is going to Canada in the main. It will be refined at the Maple Leaf refinery at Coutts, Canada, just across the boundary from Sweet Grass, Montana.

The Western Natural Gas Co. has made a location for another test in the wildcat area of the Sweetgrass Hills north of the Sunburst Field. This well will be on the United States side of the boundary and is located on Section 27-37-4.

**ROCKY MOUNTAIN PRODUCTION**
**Runs From Field Week Ended October 27**

| | |
|---|---|
| **WYOMING** | |
| Salt Creek | 40,170 |
| Big Muddy | 2,730 |
| Grass Creek | 2,240 |
| Elk Basin | 1,070 |
| Greybull | 10 |
| Rock River | 2,510 |
| Lance Creek | 370 |
| La Barge | 2,200 |
| Poison Spider | 850 |
| Oregon Basin | 5,600 |
| Osage | 510 |
| Mule Creek | 720 |
| Lander | 320 |
| Byron | 30 |
| Lost Soldier | 4,000 |
| Simpson Ridge | 80 |
| Dutton Creek | 50 |
| Pilot Butte | 280 |
| Rex Lake | 160 |
| Total Wyoming | 63,900 |
| **MONTANA** | |
| Cat Creek | 1,500 |
| Lake Basin | 530 |
| Kevin-Sunburst | 8,300 |
| Pondera | 2,000 |
| Total Monta | 12,330 |
| **COLORADO** | |
| Florence | 1,318 |
| Moffat | 1,238 |
| Fort Collins | 2,263 |
| Iles Dome | 1,916 |
| Rangely | 100 |
| Tow Creek | 468 |
| Boulder | 25 |
| Total Colorado | 7,328 |
| **NEW MEXICO** | |
| Rattlesnake | 280 |
| Hogback | 500 |
| Artesia | 956 |
| Cap Rock | 156 |
| Table Mesa | ... |
| Total New Mexico | 1,892 |
| Total Rocky Mountain | 85,450 |

## KANSAS FIELDS

(Continued from Page 44)

troleum Corp. and T. K. Simmons' No. 6 Ellis, SW cor. SE, Section 26-23-11, is a rig under construction.

Syndicate Oil Co. and Phillips Petroleum Co.'s No. 1 Edwards, NW cor. NE, Section 35-23-11, was completed for 250 bbls. in Bartlesville sand at 1,847-70 feet. Derby Oil Co. and others' No. 1 Winzler, SW cor. Section 21-22-13, is dry and abandoned at 1,841 feet.

**Franklin County**

Howard & Howarth's No. 1 Barton, C NW SE, Section 25-16-17, is shut down at 1,243 feet. No. 2 Barton, C NE SE, Section 25-16-17, is drilling at 600 feet.

**Lyons County**

T. K. Simmons' No. 1 Heidrick, SE cor. NW, Section 35-21-11, is drilling at 1,030 feet.

**Sedgwick County**

Simmons & Canary's No. 1 Hoover, SW cor. SE, Section 9-26-1, is a rig under construction.

**McPherson County**

Amerada Petroleum Corp. made location for No. 1 Rosenberg, SW cor. SE NW, Section 31-18-2w. Merriman and others' No. 1 Anderson, C SW, Section 29-18-2w, was completed for 4,000,000 feet of gas in sand at 2,945-51 feet.

**Marion County**

Empire Oil & Refining Co. is building the rig for No. 1 Suderman, SE cor. NE, Section 12-19-2. Darby Oil Co.'s No. 1 Nickel, NE cor. SE, Section 12-19-2, is rigging.

**Morris County**

Loomis & Anderson's No. 1 Sisson, NW cor. SE, Section 14-17-7, is drilling at 1,570 feet. General Utilities Co.'s No. 1 Pape, NE cor. Section 15-16-7, is drilling at 1,425 feet.

**Rooks County**

Empire Oil & Refining Co.'s No. 1 Doodrill, NE cor. SE NW, Section 15-8-18w, is dry and abandoned at 3,450 feet.

**Russell County**

R. E. Day and others made location for No. 4 Mermas, NE cor. SE NE, Section 32-13-15w. Gypsy Oil Co.'s No. 1 Cook, C NE SE, Section 10-13-15w, is dry and abandoned at 3,448 feet.

**Sumner County**

Marland Oil Co.'s No. 1 Warner, NW cor. SW SE, Section 23-34-2, is rigging up to deepen from 3,490 feet. Jarvis and others' No. 1 Werneke, SE cor. SW, Section 4-34-3w, has been abandoned at 4,686½ feet. Harris & Haun's No. 1 Warner, C NW NE, Section 23-34-2, has been completed for 45 bbls. in sand at 3,791-93 feet. Shawver and others' No. 1 Spencer, SE cor. NE, Section 27-34-2, made 100 bbls. from sand at 3,505-20 feet.

## SCHOOLS PERFECTING PETROLEUM COURSES

(Continued from Page 34)

gotten to leave behind at the university. Others are taken on as junior petroleum engineers, junior geologists, research assistants. Some find work about the stills, on pipe line projects or with surveying corps. Humble jobs without exception and the young graduate is lucky if he can get $125 a month at the start. Then he must "show what he has got."

**Many Foreigners Study Here**

While the various schools draw their students mainly from the region round about them, there is a plentiful sprinkling of foreigners. Registrars report students from Europe, India, South America and the Philippines. The University of Pittsburgh has young men "from throughout the United States, from Brazil, Argentine, Russia, Poland, Bulgaria and Rumania." The University of California enrollment comes from many states in the Union, but it is added to by China, Japan, the Philippines, Hawaii, Russia, Egypt, Burmah, Rumania, Holland, Argentine, Mexico and Chile.

The instructors in petroleum courses are for the most part men of full academic training, with practical experience in the subjects handled besides. Some are practical oil men without college degrees, but possessing the ability to impart what they know to others.

In some of the schools the student is introduced to the use of modern geophysical instruments, the magnetometer, the torsion balance and the seismograph. In this connection the Missouri School of Mines reports: "Next year the school contemplates the enlargement of courses in geophysical prospecting. Members of the physics department expect to make an extended trip through the oil fields to study the methods employed by the various companies, and next fall more time will be devoted to this branch of study by those specializing in petroleum production and in geology."

How thoroughly the schools understand the problems of the oil field and the refinery and how earnestly and capably they have set out to give young men a basic training that will aid them in grappling with these problems is indicated by the bulletins issued by the schools. That of the University of Oklahoma presents the attitude of the school toward the student and toward the petroleum industry so well that the following is quoted from it:

**Petroleum Engineering Defined**

"Petroleum engineering consists in the application of the principles of engineering to the petroleum industry.

"The petroleum engineer must understand the general principles of physics, chemistry, mechanics, and geology. He must understand fuels, the elements and operation of steam engines and boilers, internal combustion engines, and electric motors. He must also understand the technique of the petroleum industry, such as the drilling of wells, production methods, the elements of the refining of crude oil, and general business principles.

"The petroleum engineer may be engaged in the drilling and development branch of the industry where his duties may require that he pass upon the merit

of areas to be prospected and developed, and decide where the wells should be located and the most suitable method to be used in drilling them. As drilling progresses he should make a study of the formations penetrated, and perhaps after considerable drilling has been done and a number of wells completed, he should make a study of subsurface conditions by means of graphic logs and peg models.

"The petroleum engineer may be engaged in the production branch of the industry. Here he must understand production methods and equipment. At flowing wells he must know when and how to tube them, when to flow under back pressure, etc. At pumping wells he must know whether the wells should be pumped individually "on the beam" or pumped as a group by means of a central "power" or "jack plant." At pumping wells he must know the size of tubing, working-barrels and rods best suited to the conditions existing. If the wells produce water with the oil he must decide whether the water is coming from the same sand as the oil or is entering the well through a leak in the casing. In the former case he will have to choose a method for heating and separating the water from the oil and in the latter case he will have to devise a method for excluding the water.

"The petroleum engineer may be engaged in the refinery branch of the industry where he must understand all of the steps in refining crude oil and producing gasoline, kerosene, lubricating oils, and other refined petroleum products.

"The petroleum engineer may be engaged in the natural gasoline department of an oil company. He must understand the equipment and methods used in the extraction of natural gasoline from natural gas, such as the compression and the absorption methods.

**Spend Summer at Drilling Well**

"For students in petroleum production engineering and oil field management, it is recommended that they spend the summer between the first and second years at a well being drilled by the standard tool method, between the second and third years at a well being drilled by a rotary method, and between the third and fourth years at a producing oil well property.

"For students in refinery engineering, it is recommended that they spend one summer before graduation at a refinery laboratory, one summer in one of the operating departments of a refinery and another summer in a compression or absorption plant for recovery of natural gasoline."

The increasing interest felt by educational institutions in the subject of petroleum engineering is evidenced by expressions from many of the schools. Among the 11 classified as having full courses in petroleum, three have installed these courses within the last year. These are the University of Tulsa, the University of Minnesota and the State College of Washington.

Schools which in former years offered no studies whatever designed to prepare young men for careers in the oil industry are now making additions to their curricula with this in view. Maj. F. B. Carrithers, executive assistant at the University of New Mexico, Albuquerque, N. M., writes, "While it will appear that our courses in relation to the oil industry are meager, the university has started a great growth which will be carried on as the oil industry grows in this State."

Donald H. McLaughlin, professor of mining engineering at Harvard University, Cambridge, Mass., says: "No special courses in petroleum engineering are given at Harvard, but courses in petroleum geology, industrial chemistry and various phases of the regular engineering programs are given that would be of direct benefit to a man planning to enter this field. Enrollment in the classes of petroleum geology usually amounts to between 20 and 30 students, of whom perhaps one-third have planned to go into the field professionally. The courses require thorough preparation in general geology and other elementary courses and are usually taken by seniors. No instruction in the field in petroleum geology alone is given at Harvard, but all men in the courses in industrial chemistry and the various branches of engineering are required to spend at least one summer in industrial work as well as a summer at the engineering camp."

**Hopes for Endowments**

"I hope," writes President H. L. Kent, of New Mexico College of Agriculture and Mechanical Arts, State College, N. M., "that some time soon the oil men may see their way to endowing chairs in some of the smaller institutions. Those of us who work in those institutions feel that the small school with its limited number of students offers some opportunities in fitting men for the really hard work that is required during their years of apprenticeship that the larger institutions do not offer. We have been interested in this work for some time. Our graduates who go into the work seem to be prospering and like the work."

Dean George B. Pegram, Schools of Mines, Engineering and Chemistry, Columbia University, New York, writes: "We offer a curriculum in mining geology without, however, special reference to oil geology, but we have courses of instruction in the geology of oil and gas and in paleontology with reference to its application to gas problems, including petroleum problems. It is our expectation to develop instruction and research in geophysics, and this will of course bear directly upon the location of petroleum. We already have an appropriation for this work."

Colgate University, Hamilton, N. Y., has installed a course in geology of petroleum which takes up the origin of petroleum, and the details of its occurrence in nature, as related to the nature and attitude of the enclosing rocks. The surface indications of petroleum, and methods of prospecting and mapping are studied, as well as the recovering, refining and utilization. Natural gas and oil shales are briefly discussed as to geological occurrences and utilization. A study is also made of the important producing fields of the world.

The Polytechnic Institute of Brooklyn, N. Y., announces that it will offer this fall four graduate evening courses leading to the master's degree for engineers, chemists and other technicians who are engaged during business hours. Among the subjects of instruction are engineering economics, advanced physical chemistry, evaporation and distillation, heat power engineering, water power engineering, oil and gas power engineering, kinetic theory of gases.

## CUT OUT COMPETITION THAT IS UNECONOMIC

(Continued from Page 30)

activities to market requirements should mean larger earnings per barrel without any great change in prices."

**Balanced Refinery Operations**

Continuing on the subject of balanced refinery operations, "The Lamp" says:

"When a raw material is both cheap and plentiful it encourages wasteful handling. In the early history of this country buffalo ranged the plains in such vast herds as to make it an easy matter for the aborigines and later the 'forty-niners' to get an ample supply of choicest meat cuts without regard to a much larger part of the carcass thrown away. Today with beef cattle selling at top prices, packers work up every part of their livestock until nothing of any value is thrown away. Similarly, the lumber industry has long since ceased to throw into fires hugh quantities of slab and is now cutting timber after a carefully designed plan to get the maximum footage out of each trunk. Sugar refineries convert stalks into soundproof building material and other by-products.

"The petroleum industry of necessity was an uneconomic user of a natural resource in the early days through losses in the escape of gas. In recent years it has reduced actual waste of its raw material pretty close to a minimum. Nevertheless, it has been guilty of uneconomic practice in another form.

"There is a loss due to the production of a large percentage of a product which has overloaded the market. The industry is now beginning to learn that it should not run solely for gasoline, trusting to chance to get a fair price for its incidental production of fuel oil. The best thought today calls for operation by refineries according to a balanced program. It is not enough that they should stop the overproduction of gasoline; they should be equally solicitous in the matter of less wanted products.

"Of late the refineries have turned out such excessive quantities of fuel oil while running for gasoline as to ruin a secondary market. The result is that today fuel oil is not competing in price with any comparable fuel but only against itself. For a long time it has sold well below coal on a useful B.t.u. basis. While this is of direct benefit to a limited number of buyers using oil instead of coal for the generation of power, it can hardly be argued that their interest is more important than the welfare of a vast army of future motorists whose potential supply of gasoline should be conserved.

"Even though there is an oversupply of crude, it would seem apparent that both the industry and the general public would profit if the refiner manufactures his product requirements by running the minimum amount of raw material. By more extensive cracking of residuals the quantities of crude used to produce a given amount of gasoline may be further reduced."

## GREAT OIL SHOW UNQUALIFIED SUCCESS

(Continued from Page 31)

thing comparable you would have to turn to a world's fair where appliances used in all industries are shown."

Alf G. Heggem, vice president of the exposition, was especially impressed by the wonderful instruments assembled in the Scientific and Technical Building. "There always has been a feeling," he said, "that it should be possible somehow to determine the location of minerals hidden deep in the earth. They used to try to do it with twigs of trees, and we've had the oil smeller. But devices shown in the Scientific Building really do come mighty close to doing with mathematical accuracy the thing that folks used to try to do through superstition."

Comparisons between the exposition of 1928 and that of last year offer striking evidence of the progress made. A total attendance of 75,000 recorded last year contrasts with 104,745 in 1928. This year's attendance by days follows: Saturday, October 20, 6,897; Sunday, 8,859; Monday, 8,448; Tuesday, 11,162; Wednesday, 13,695; Thursday, 14,315; Friday, 13,904; Saturday, 14,253; Sunday, 10,212; Monday (closing day), 3,000. These figures represent paid admissions and the passes issued to exhibitors, city officials, newspapers, etc. Mr. Gibbons estimated that 95 per cent of the attendance represented paid admissions. To the figure given could be added about 300 each day—3,000 altogether—these being attendants at exhibition booths who entered the grounds at a pass gate which kept no turnstile record.

In 1927 there were 256 contracts for exhibition space and 300 exhibits, as compared with 299 contracts in 1928 and 450 exhibits. The $6,000,000 estimated value of the exhibits in 1927 compares with an estimated value of $10,000,000 placed on the exhibits this year. Six organizations had space last year in the Scientific and Technical Building. There were 21 manufacturers, bureaus and other organizations represented in the building this year.

**Exhibitors Use 102,976 Square Feet**

Without counting the space occupied by the Drake well, the "official" well, the spring-pole and other ground utilized by the exposition management itself, 102,976 square feet of space was occupied by exhibitors this year. This space was sold for $101,403.50. That amount compares with $92,000 received for space last year, when the price fixed was one-third higher.

The foreign attendance last year was negligible. This year it was an extremely important factor. There were 70 visitors from 24 foreign countries, some of them coming as official delegates from their respective governments. These men came from oil-producing regions and no secret was made of the fact that their principal mission was to study American-made equipment with a view of making purchases. One estimate indicated that contracts resulting from the visit of these foreign oil men might aggregate $1,000,000. Among the foreign visitors were:

C. E. Bowes, Toronto, Canada, petroleum geology; Dr. E. T. Lehner, Trinidad, British West Indies, leaseholder; F. Leo Melvill, Trinidad, British West Indies, general agent Trinidad Leaseholders, Ltd.; J. C. Garcia, Quito, Ecuador, government representative; E. R. Kirkpatrick, Maracaibo, Venezuela, Lago Petroleum Corp.; Trinidad Paredes, Mexico City, Mexico; Ester Wade Paredes, Mexico City, Mexico; Garcia V. Ginto, Buenos Aires, Argentine, Argentine government; Herman Bruner, Buenos Aires, director Journal of Mines; F. Paredes, Mexico City, Mexico, geophysics; C. T. Campodonico, Buenos Aires, Argentine government oil engineer; George Anagnostache, Rumanian government delegate; H. E. Hickman, Mexico City, Mexico, Mexican Pierce Oil Co.; W. Korobovkin, U.S.S.R., Doceop Lqadben N. Y. Embaneft; Jean N. Oparin, U.S.S.R., Moenba Mescreeykad Afheft, general representative; Oscar Woinaresky, Victor Dumitrescu and Ernest Dimitriu, Bucharest, Rumania; Jack Burden, Tampico, Mexico, Mexico Sheldon Burden Drilling; F. B. Bimel, Toronto, Canada; W. E. Bonner, Tampico, Mexico, Material Exchange president; Dr. Ing. Karl Glinz, professor at the University of Berlin, Germany; John Bolton, Vienna, Austria, Ingersoll Rand, G.M.C.H. manager; George Calleya, Bucharest, Rumania, government engineer; Margarita Calleya, Bucharest, Rumania; D. Carlos Grisanti, minister of Venezuela, and Pedro Marques Rivero, Legation of Venezuela; Mr. and Mrs. A. R. Tillotson, Tampico, Mexico; Nicholas Antonoff, U.S.S.R., Amtorg Trading Co.; C. B. Hulbert, Oil Well Supply Co., Tampico, Mexico; Carleton J. Anderson, Oil Well Supply Co., London, England; Ivan W. Klimkiewicz, Poland, journalist; Eduardo Saubidet, Buenos Aires, Argentine; J. H. Larsen and V. N. Andreer, Galara, Peru; Count Allessandro Cenci-Bolognetti, Rome, Italy; T. N. Vanzant, Kantex Refining Co., Toronto, Canada; A. L. Wilson, Galt, Ontario, Canada; W. S. Applegate, Calgary, Canada; B. C. Ketchen, Imperial Oil Co., Toronto, Canada, and L. E. Bury, Imperial Oil Co., Toronto, Canada; Senor Luis Coll Pachero, Venezuela; K. A. Susuki, Orange Petroleum Corp., Okayma, Japan; H. D. Chittenden, Oil-well Selection Co., London, England; Senor Luis Corredor Latorre, General Council of Colombia, Colombia; T. Ohno, Nippon Oil Co., Ltd., Tokyo, Japan; Emile Miguet, Cie Francaise des Petroles, Paris, France; Pierre Lesimple, Desmarais Freres, Paris, France.

**Many Improvements Installed**

Improvements installed in the last year contributed greatly to the comfort and convenience of visitors to the exposition and thus aided directly in its success. These improvements included concrete sidewalks and the draining and surfacing of areas that last year were mostly mud; installation of telephones, a telegraph office, post office, express office and readily accessible rest rooms; a street car loop that enables passengers to step from cars a few feet from an entrance gate; railroad facilities that enable exhibitors to ship displays by freight from any point in the country direct to the exposition grounds; free and convenient parking space and the abolition of amusement concessions that detracted from interest in exhibits, tended to give the exposition the color of a carnival and encouraged the spending of money.

Last year the board of directors spent

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Charleston, S. C.
Savannah, Ga.
Jacksonville, Fla.
Port Tampa, Fla.
Mobile (Magazine Point, Ala.)
New Orleans (Gretna, La.)
Port Arthur, Texas
Galveston, Texas

$80,000 in improving the plant. This year the board expended $65,000. All these expenditures are part of a general program for the improvement of the exposition grounds, which will be continued. Although no definite statement was given out by the directors concerning the specific improvements planned for next year, it is known that among the things under consideration are a small auditorium for meetings, showing of moving pictures, etc.; placing more of the grounds under roof, and extension of the exhibition area. The exposition has 20 acres of land under lease for 25 years from the State Fair Association.

## EXPORT CORPORATION MEMBERSHIP OPEN

(Continued from Page 30)

combine, there will be plenty of business left for them. It is not felt by these interests that the sponsors of the export group will be able to get anything like 100 per cent membership from the smaller refining interests of the country and that thus, while their own sources of supply may be curtailed somewhat, there will still be plenty of "outside" refined oil to fill their requirements. If things work out in this fashion, they feel, the export corporation will be quite valuable to their business, in that it will make for stabilized markets abroad.

**Excites Great Interest**

Notwithstanding the dearth of news from those handling the organization work, the movement continues the principal topic of conversation among oil trade interests here. It seems to be generally felt that the industry as a whole regards the export organization as a constructive measure, and that the new marketing group will be in position to take hold of many of the trade problems and adjust them to present day marketing conditions. The idea of pooled sales, and filling of export orders from the ports nearest to the buying market, has aroused particular commendation, involving as it does the simplification of hauling and consequent very material savings in transportation charges.

Judging from current comment regarding the export group, there were many in the oil industry not familiar with the terms of the Webb-Pomerene Act, permitting industries to organize for co-operative selling in foreign markets and the news that the petroleum industry of the United States can get together in one large and well-knit unit for disposing of its products abroad is a pleasing one to the industry. Summed up, the consensus of opinion seems to be that with the final organization of the export sales agency, the industry will have shaken off many of the outworn and uneconomic practices which have been a hindrance to the proper development of foreign marketing of American oil products.

## ROYALTY AND PRODUCING INTERESTS ARE THE SAME

(Continued from Page 29)

thought of producing only enough of the State's oil resources to maintain a living price, millions of barrels of crude they practically gave away would have still been in the ground awaiting production and sale at profitable prices and the profits thrown to the winds would eventually have been placed to their credit in the banks.

**Effect on "Innocent Bystander"**

The "sins" of the Oklahoman were visited upon the Kansan in the same period even though the Kansas oil producer was not guilty of overproduction. In 1926, 41,498,000 bbls. of oil was produced in Kansas according to the Bureau of Mines figures and it was valued at $93,800,000, or an average of $2.19 per barrel. In 1927, overproduction in other states brought the value of Kansas crude down to an average of $1.63 per barrel and the 41,069,000 bbls. of oil produced that year brought the income of producers and royalty owners down to $58,300,000, a falling off of $35,500,000 on production only a little less in volume than that of the year before.

**Every State Suffered**

Producers in every oil-producing state in America showed a loss in oil revenue in 1927 as compared with 1926, with the exception of Michigan, where the output is small. The Gulf Coastal Field of Louisiana showed increases in revenue but the combined fields of Louisiana sustained a serious loss in the total value of the crude produced.

Texas, outside the Gulf Coast, produced 44,589,000 bbls. in excess of its production of the year before but the revenue fell off $59,400,000. Producers in California, with an increase of 6,523,000 bbls., suffered a decline of $84,812,000 in revenue. Wyoming operators, who produced 4,469,000 bbls. less in 1927 than in 1926 sustained a loss of $21,190,000 in oil revenue and Arkansas with only a 5-cent cut in the average price of its crude saw its oil revenue diminish by $22,200,000 in 1927. The Texas coastal fields increased 5,884,000 bbls. in production in 1927 but the total revenue was cut down $710,000 by reason of an average production of 20 cents per barrel in the price paid for the oil.

The decline in values in other states than those given above was as follows: Colorado $1,700,000, New York $90,000, Ohio $4,210,000, Pennsylvania $2,780,000, Tennessee $10,000, West Virginia $3,150,000, Illinois $5,500,000, Indiana $380,000, Kentucky $4,030,000, Montana $3,080,000, Mew Nexico $1,590,000. Of the above listed states Colorado, New York, Ohio, Pennsylvania, Tennessee and West Virginia all showed increased production in 1927 over the year before.

**Revenues Cut 20 Per Cent**

Overproduction caused an increase of 130,255,000 bbls. in 1927 according to government figures and a reduction in the average price paid for oil of 58 cents per barrel. In other words, a 17 per cent increase in production caused a 31 per cent cut in the price received for the production, and a nearly 20 per cent reduction in the total revenue.

If the above figures, derived from governmental sources, are not a sufficient argument in favor of conservative producing methods then how are the producer and the owners of royalties to be reached by argument?

The facts are well known to men active in the fields where oil is produced. They are given here to emphasize to the absentee producer and the absentee royalty owner the loss they have sustained by overproduction, and in the hope of bringing producer and royalty owner on a common ground, where they belong. Co-operation in the producing branch of the oil business is a necessity, but not merely co-operation in the conservative development of one or a few flush fields. The Oklahoman must co-operate with the Texan and both with the Californian, and the royalty owner with the producer.

The oil industry wants to run its own affairs, but it cannot do it unless there is unity in thought and action.

## L. C. LONGAKER NAMED AS VICE PRESIDENT

OIL CITY, Pa., Oct. 27.—At a meeting of the board of directors of the National Transit Co. and National Transit Pump & Machine Co. changes were made in the company organization to fill vacancies caused by the death recently of C. E. Martin, vice president and director.

L. C. Longaker, treasurer, was elected vice president and treasurer and L. E. Lockwood was elected a director and was also appointed assistant general manager.

The new vice president has served continuously with the company nearly 50 years. He entered the company's services as a field worker in the Bradford Field during the early oil days. Later he entered office employ and for many years was agent for the company at Bradford.

Following the death of E. E. Colling, Mr. Longaker came to Oil City in January, 1927, and was made assistant treasurer and director. Upon the death of D. R. MacKenzie he was made treasurer and still continues in that position in addition to being vice president.

Mr. Lockwood entered the service of the National Transit Co. in 1893 and has served in various capacities. He is a former president of the Crescent Pipe Line Co. and recently returned to the local offices.

**STATES IN WHICH THERE WAS AN INCREASE IN TOTAL PRODUCTION IN 1927 OVER 1926, BUT A DECREASE IN TOTAL VALUE**

| State— | Increase in prodn. bbls. | Decrease in revenue | Reduction per bbl. in average price paid for crude |
|---|---|---|---|
| California | 6,523,000 | $84,812,000 | $.41 |
| Colorado | 63,000 | 1,700,000 | .64 |
| New York | 286,000 | 90,000 | .51 |
| Oklahoma | 98,580,000 | 16,700,000 | .88 |
| Ohio | 321,000 | 4,210,000 | .51 |
| Pennsylvania | 565,000 | 2,780,000 | .50 |
| Tennessee | 17,000 | 10,000 | .73 |
| Texas Gulf Coast | 5,884,000 | 710,000 | .20 |
| Texas, outside Gulf Coast | 44,589,000 | 59,440,000 | .86 |
| West Virginia | 4,469,000 | 3,150,000 | .57 |
| Total | 161,297,000 | $173,602,000 | .. |

**States in Which There was a Decrease in Production in 1927 as Compared with 1926 and a Decrease in the Total Value of the Crude Produced**

| | Decrease in prodn. bbls. | Decrease in revenue | Reduction per bbl. in average price paid for crude |
|---|---|---|---|
| Arkansas | 18,327,000 | $22,200,000 | $.05 |
| Illinois | 766,000 | 5,500,000 | .55 |
| Indiana | 44,000 | 380,000 | .57 |
| Kansas | 429,000 | 35,500,000 | .84 |
| Kentucky | 445,000 | 4,030,000 | .76 |
| North Louisiana | 1,293,000 | 8,820,000 | .37 |
| Montana | 2,669,000 | 3,080,000 | *.08 |
| New Mexico | 440,000 | 1,590,000 | .59 |
| Wyoming | 4,469,000 | 21,190,000 | .58 |
| Total | 28,882,000 | $102,290,000 | .. |

*Increase.

**Fields in Which There was an Increase in Production in 1927 Over 1926 and an Increase in Total Value of the Crude Produced**

| | Increase in prodn. bbls. | Decrease in value of total prodn. | Average reduction per bbl. in price paid for crude |
|---|---|---|---|
| Louisiana Gulf Coast | 910,000 | $360,000 | $.18 |
| Michigan | 345,000 | 579,000 | .79 |
| Miscellaneous | 1,000 | 23,000 | .. |
| Total | 1,256,000 | 953,000 | .. |


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## MAGNETOMETER SURVEY OF STATE OF OKLAHOMA

(Continued from Page 33)

in the south central part of the State. It contains nearly all of Murray County, the northern half of Johnston County, the southern part of Pontotoc County, and the southwestern part of Coal County. The area is roughly triangular in shape with the base of the triangle to the southeast, and contains approximately 860 square miles . . .

"The Wichita Mountains consist of ranges and groups of hills extending from Lawton in Comanche County north and west across Kiowa County to Granite in Greer County. The length of the area from east to west is about 60 miles and the width from north to south is about 25 miles . . . Nearly all of the hills forming the group are composed of granite or other igneous rock . . .

"The Wichita Mountains proper comprise a considerable area extending from Fort Sill north of west to Cooperton. The mountains are composed principally of a granite which is fine to medium grained, and generally of a pink color. The extreme southeastern portion of the mountains is composed of porphyry, and considerable areas within the mountains are composed of gabbro or closely related igneous rocks."

### General Magnetometer Results

A general comparison of the magnetic results over the same general regions outlined above under "General Structural Geology" shows some very interesting features.

Plate 1 shows a contoured map of Oklahoma based on the vertical component of the earth's magnetic field as obtained from the United States Coast and Geodetic Survey data. The contour interval is 100 gamma.

In general the contour lines have a northwest southeast direction with indications of several pronounced magnetometer anticlines running almost due north and south across the State.

Plate 2 shows some of the magnetic anomalies for the State. To the values of the vertical intensity as obtained by the United States Coast and Geodetic Survey there have been applied corrections for latitude and longitude on the assumption that there is a normal decrease in the earth's magnetic field intensity as the distance from the north magnetic pole is increased. After this regional correction is taken into account there results the magnetic anomalies as shown.

It is again pointed out that these maps are prepared on the basis of a few well-chosen stations and will naturally given only a regional picture of the State. It is obvious that in any area a detailed survey would show considerably more detailed magnetic structures than is possible or intended in the scope of this paper.

## STORAGE ON GULF COAST AND SOUTHWEST TEXAS

By Neil Williams

HOUSTON, Tex., Oct. 27.—Crude storage in the Gulf Coast and Southwest Texas increased 965,632 bbls. during the month of September, total crude stocks on October 1 being 24,246,506 bbls. as against 23,280,874 bbls. on September 1.

The above figures, however, are not indicative of the true crude situation in coastal and southwest Texas fields due to the fact that the increase came about not from crudes of these districts but from oil moved into coastal storage from other fields, principally the Mid-Continent and West Texas.

The latter is shown in the increase in stocks (steel. at Spindletop from 5,952,-500 bbls. on September 1 to 7,001,743 bbls. on October 1. This gain of 1,049,-243 bbls. is at the rate of 34,975 bbls. daily while the total production of the field is only from 37,000 to 40,000 bbls. daily. In reality Spindletop storage now is being used for crudes from many fields, Gul Production Pipe Line Co. during September being one of the largest accumulators of outside crude. The same is true of other fields where some of the major pipe line companies have surplus storage not used by Gulf Coast crudes.

Storage at refinery and terminal tank farms also is comprised largely of other crudes than those produced in the Gulf Coast and Southwest Texas.

The coastal fields of Louisiana were the only district in which a decline in stocks was shown during September but this decrease was more than offset by the gain in the Texas coastal area.

Stocks October 1 were:

**GULF COAST FIELDS**

| | Steel | Earthen |
|---|---|---|
| **Texas** | | |
| Batson | 3,650 | ..... |
| Barbers Hill | 1,000 | ..... |
| Big Creek | 32,000 | ..... |
| Boling | 32,595 | ..... |
| Damon Mound | 20,100 | ..... |
| Dayton | 1,000 | ..... |
| Goose Creek | 128,133 | 89,024 |
| Hull | 275,050 | ..... |
| Humble | 1,069,441 | 730,701 |
| Liberty | 30,720 | ..... |
| Markham | 32,406 | ..... |
| Orange | 144,098 | ..... |
| Pierce Junction | 50,473 | ..... |
| Saratoga | 55,107 | ..... |
| Spindletop | 7,001,743 | 175,000 |
| Sour Lake | 1,239,242 | 326,662 |
| West Columbia | 1,183,885 | 532,847 |
| Total | 11,300,643 | 1,854,234 |
| **Louisiana** | | |
| Evangeline | 63,124 | ..... |
| Edgerly | 14,275 | ..... |
| Vinton | 145,388 | ..... |
| Lockport | 681,053 | ..... |
| Sorrento | 1,000 | ..... |
| Total Louisiana | 904,840 | ..... |
| Total Gulf Coast Oct. 1 | 12,205,483 | 1,854,234 |
| Total Gulf Coast Sep. 1 | 11,729,872 | 1,677,411 |
| Increase | 475,611 | 176,823 |

**COASTAL REFINERY AND TERMINAL STORAGE**

| | | |
|---|---|---|
| Englewood | 1,112,097 | ..... |
| Norsworthy | 322,521 | ..... |
| Pasadena | 89,183 | ..... |
| Sinco | 711,985 | ..... |
| Webster | 2,027,438 | ..... |
| Texas City | 2,645,000 | ..... |
| Lynchburg | 94,614 | ..... |
| Baytown | 2,481,270 | ..... |
| Crosby | 143,743 | ..... |
| Almeda | 89,880 | ..... |
| Total Oct. 1 | 9,717,731 | ..... |
| Total Sept. 1 | 9,255,596 | ..... |
| Increase | 462,135 | ..... |

**SOUTHWEST TEXAS FIELDS**

| | | |
|---|---|---|
| Luling | 566,542 | ..... |
| Lockhart | 25,204 | ..... |
| Laredo | 1,731,546 | ..... |
| Total Oct. 1 | 2,323,292 | ..... |
| Total Sept. 1 | 2,295,406 | ..... |
| Increase | 27,886 | ..... |

## WILL BUY PIPE LINE MATERIAL

CHICAGO, Oct. 27.—The Ozark Pipe Line Co., a wholly owned subsidiary of the Shell Union Petroleum Co., is asking for bids to supply 400 tons of 10-inch line pipe presumably for its new line from West Texas to Houston which has been announced.

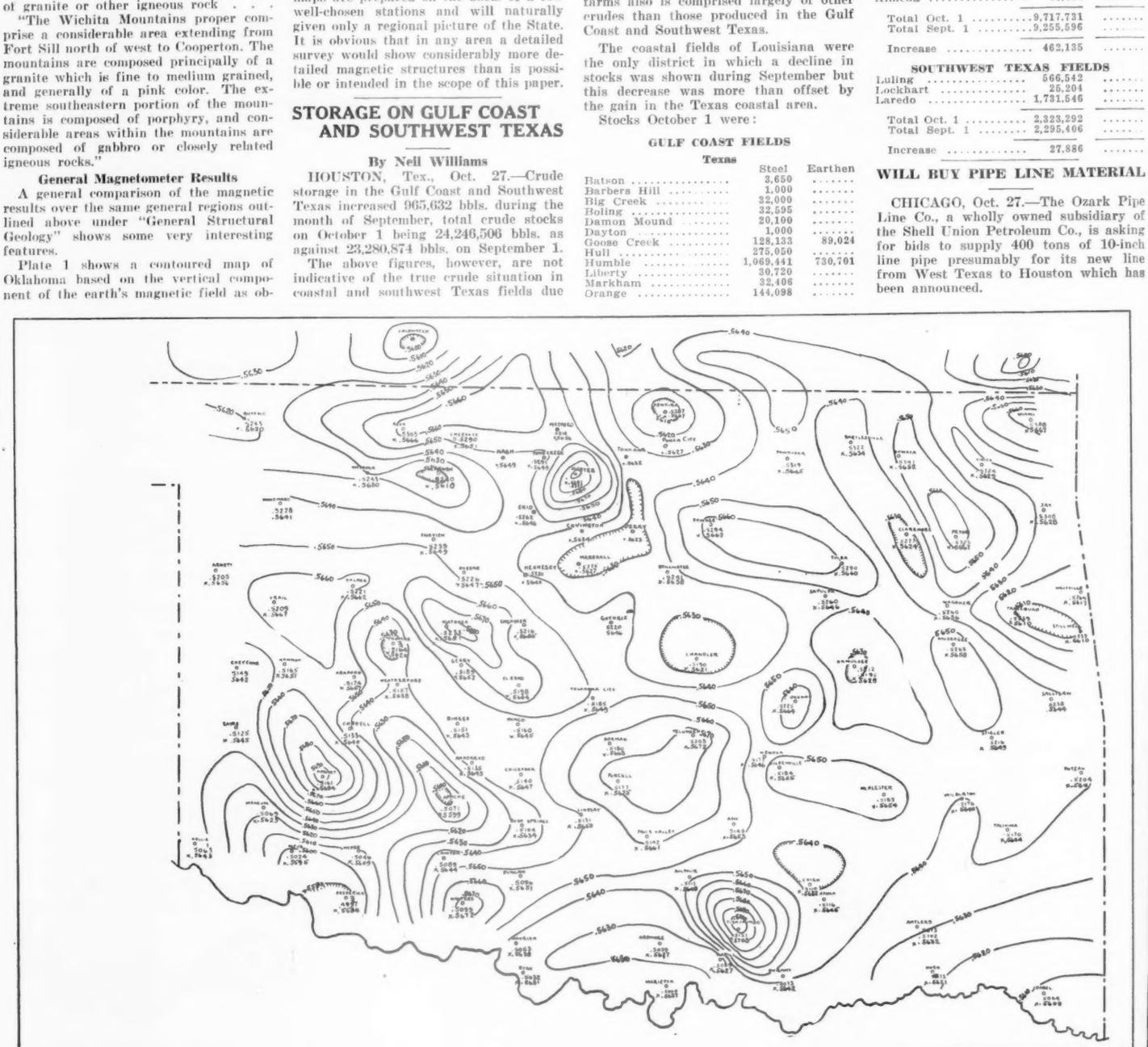


PLATE 2.

VERTICAL MAGNETIC INTENSITY MAP OF OKLAHOMA corrected for REGIONAL VARIATIONS. Readings at each station marked with x indicate the Vertical Intensity after regional corrections have been applied and are the values used in contouring.

Contour interval ..... 100 Gamma.

Scale ..... June 25, 1928.

Drawn by ..... L. Spraragen.

## MUSKEGON FIELDS

(Continued from Page 56)

short distance from the discovery and second wells drilled to open the field. It also will be shot.

Four dry gas wells were completed with an average open flow capacity of 10,000,000 feet each. The Muskegon Development Co.'s No. 1 Myler, SW NW, Section 8-10-16, was the largest with a flow gauged at about 12,000,000 feet from the Dundee formation at about 2,050 feet.

The Joliet-Morris Development Co.'s No. 3 Ehlers, SW NE, Section 8-10-16, came in at from 2,026-2,300 feet as a dry gasser with an open flow of 11,500,000 feet a day.

A. S. Cochran's No. 1 Taggart, SE SE, Section 5-10-16, which was drilled down from a small pumper in the upper Traverse formation, came in with a flow of 9,500,000 feet a day of gas from the Dundee formation at 2,040-48 feet.

The smallest gasser to be completed here this week was the Ma-Ha-Goo company's No. 1 Mahoney, SE SE, Section 5-10-16, which had an open flow gauged at 8,500,000 feet when it was capped.

Four other wells are about to be completed in the lower formation within the next few days. They are McAfee-Refior's No. 1 Anderson, NE NW, Section 9-10-16; Victor Oil & Gas Co.'s No. 1 Bensinger, NE SE, Section 5-10-16; Johnson Oil Refining Co.'s No. 1 Smith, SE SE, Section 5-10-16; and the Paragon Oil Co.'s No. 1 Tripp, SE SE, Section 5-10-16.

There was several hundred feet of oil in the Shoup Oil & Gas Co.'s No. 3 Shoup well, NW NW, Section 8-10-16, drilling at 1,680 feet. The Dixie Oil Co.'s No. 11-D Figge, NW NE, Section 8-10-16, also had a show of oil in the upper pay at 1,640 feet but will be carried to the Dundee formation as an offset to C. M. Bowers' No. 2 Hower.

The Puritan Oil Co.'s No. 1 Plunkett, SE SE, Section 8-10-16, was ready to drill into the upper pay in the Traverse formation after being cased at 1,590 feet. Four other wells are within less than 100 feet of the producing stratum of the Dundee formation: Swastika Oil & Gas Co.'s No. 1 Giles, SE SE, Section 6-10-16; Dixie Oil Co.'s No. 1-D Reeths, SW NW, Section 9-10-16; Ottawa-Davis Oil companies' No. 1 Becker, NW SW, Section 4-10-16; and Kelly Goldboss' No. 3 Burns, SE SE, Section 5-10-16.

The Johnson Oil Refining Co.'s No. 2 L. Heinz, SW NE, Section 9-10-16, an offset to the Lima Oil Corp.'s big producer on the M. Figge lease, is drilling at 1,500 feet and will be into the upper Traverse formation within a few days.

The Lake Shore Petroleum Co.'s No. 1 Reeths, NE SE, Section 8-10-16, is casing above the upper pay in the Traverse formation and will be drilled in next week.

Two more wells are drilling to the Dundee formation, one after having been abandoned as a small producer in the upper Traverse pay and the other after finding only a show in the same pay. They are respectively, the Joliet-Morris Development Co.'s No. 1 Kooi, SW NE, Section 8-10-16, and Kelly Goldboss' No. 1 Birch, SE SE, Section 7-10-16. The Ottawa-Davis companies' No. 1 Reeths, SW SW, Section 4-10-16, drilling at 1,800 feet, also should be included in this group.

The Dixie Oil Co.'s No. 1 Becker, SE SW, Section 4-10-16, has several lengths of tubing cemented in the hole above the Dundee formation which must be drilled out before the well can be completed.

Six wells are drilling at various depths above the Traverse pay within the proven field.

Four new wells are being spudded: Ottawa-Davis companies' No. 1 Torrent, NE SW, Section 8-10-16; Puritan Oil Co.'s No. 1 Burns, SE SE, Section 5-10-16; Holland Oil & Gas Co.'s No. 1 Joslyn, NE SE, Section 5-10-16; and the Continental Motors Corp.'s No. 5 fee, NW SE, Section 15-10-16.

Eighteen rigs are on the ground, moving in or being rigged up to drill on as many locations. They are: Reed Oil Co.'s No. 1 Hill, NE SE, Section 8-10-16; United Gas & Oil Co.'s No. 1 Cooper, NE SW, Section 8-10-16; Central Gas & Oil Co.'s No. 1 Joldersma, NE SW, Section 8-10-16; Muskegon Development Co.'s No. 2 Zuidema, NW SW, Section 8-10-16; Muskegon Development Co.'s No. 2 Myler, SW NW, Section 8-10-16; Reed Oil Co.'s No. 2 Torrent, SE SW, Section 8-10-16; C. M. Bowers' No. 2 Hower, SE SE, Section 5-10-16; Swastika Oil & Gas Co.'s No. 1 Berkema, SW NW, Section 8-10-16; C. Wilbur White's No. 1 Luinstra, NW NE, Section 7-10-16; Puritan Oil Co.'s No. 1 Overkamp, SE SE, Section 7-10-16; Puritan Oil Co.'s No. 1 Bishop, SE SE, Section 7-10-16; Bolema Brothers' No. 1 McLaughlin, SE SE, Section 5-10-16; Balch and Balch's No. 2 County, SW NW, Section 8-10-16; Lake Shore Petroleum Co.'s No. 2 A. Heinz, NW SE, Section 8-10-16; Ma-Ha-Goo Co.'s No. 1 Reeths, SW SW, Section 4-10-16; Dundee Oil & Gas Co.'s No. 2 Cihak, NE NW, Section 8-10-16; Kelley Goldboss' No. 1 Giles, SE SW, Section 6-10-16; and Concord Oil & Gas Co.'s No. 1 Giles, NE NW, Section 6-10-16.

The last four are new locations announced this week. There are still nine announced locations on which there is no activity at the present time.

### Laketon Township

Carl Prather's No. 1 Thompson well, SW NW, Section 12-10-17, Laketon Township, was shut in this week as a gasser after it had dropped in oil production to about 60 bbls. a day. The well is estimated to be making about 5,000,000 feet a day of gas from the Dundee formation.

Two other drilling wells in Laketon Township are nearing the Traverse pay but are not expected to yield anything at the upper level. They are the Johnson Oil Refining Co.'s No. 1 Adams, NW SE, Section 9-10-17, and the Reed Oil Co.'s No. 1 Young, SE NE, Section 11-10-17.

The former is more than 2 miles due west of the Prather-Thompson well and may be considered as a second wildcat in the new territory. The latter is a direct west offset to the Prather well. The Johnson-Adams well is drilling at about 1,500 feet today and the Reed-Young well is drilling at about 1,400 feet.

Two other wells are spudding within half a mile of the Prather test. They are the Johnson Oil Refining Co.'s No. 1 Savacool, SW SE, Section 2-10-17, and Nelson and Witt's No. 1 Andree, NW SE, Section 12-10-17.

Rigs are on the ground moving in or rigging up for five additional wells in the township. They are: Marie-Caswell-Kidder's No. 1 Shuler, NW NW, Section 12-10-17, the north offset to Prather's well; C. M. Bowers and others' No. 1 Lee, SE NW, Section 1-10-17; Murray Higgins and others' No. 1 Phelps, NW NE, Section 1-10-17; Bark and Pack's No. 1 A. Fenner, NW SE, Section 11-10-17; and the Liberty Oil Co.'s No. 1 A. Metzke, SE NW, Section 2-10-17.

The last two wells are on new locations not previously announced. The Ohio Oil Co. still has a location for its No. 1 Gates, NE SE, Section 11-10-17. This is a diagonal offset to the Prather well.

## CALIFORNIA FIELDS

(Continued from Page 56)

32-23 at Midway-Sunset early in the week and this new well, an offset to several other recent completions, came in flowing 2,460 bbls. of 21.2 gravity oil and 800,000 feet of wet gas daily from 2,920 feet. No. 32, which was drilled into the deep sand at 3,605 feet, has not yet responded to artificial stimulation and it may require considerable additional work before it gets under way as the gas pressure is almost nil. The Union Oil Co.'s No. 1 Western Pacific in Section 27-32-23, 4 miles southeast of the Republic's project, has also failed to result in commercial production and the company is considering the advisability of opening up some addtional hole before proceeding any further. The Pacific Eastern Production Co. beaned down its No. 5-B in the Fruitvale Field, a few miles west of Bakersfield in Kern County, due partially to inadequate tankage and the reluctance of refiners to bid for this oil. The Barnsdall will probably complete another well in the Elwood Field of Santa Barbara County within a few days as No. 2 Bell Luten, an offset to the discovery well, picked up the top of the pay and has been cemented preparatory to a production test. The Barnsdall will probably spud in several new wells in this field within a very short time after the next well or two has been completed as adequate transportation facilities are being provided to meet a substantial production.

### Northern California Wildcats

The Richfield Oil Co. failed to secure commercial production at 3,850 feet in its No. 1 Kerwin, a wildcat in the Semitropic area southeast of Kettleman Hills and east of the Lost Hills Field of Kern County, and drilling has been resumed. This well showed considerable gas and some promising oil sand previous to the production test but the results showed that neither the oil or gas was present in commercial quantity. The Pacific Eastern Production Co. has abandoned No. 5 Hughes in the Union Avenue area of Kern County at 4,991 feet due to the unfavorable outlook. No. 4, which recently passed the 5,200-foot level, will be carried down as a deep test. The Milham Exploration Co. expects to have its Kettleman Hills gasser under control momentarily as the crew has been working on the derrick floor completing preliminary plans. This well, which blew in flowing about 25,000,000 feet of exceedingly wet gas and approximately 500 bbls. of high gravity oil daily, has been responsible for a general resumption of work by several operators in this area. The Union Oil Co. is making preparations to drill a series of wildcats in Pacific County, southwestern Washington, where the company has 8,000 acres comprising three different areas known as the McGowan, Bear River and Raymond districts. The first test will be started in the McGowan area at a point across the Columbia River from Astoria some time within 60 days.

## CANADIAN FIELDS

(Continued from Page 53)

11, Section 13-20-3w5. Vulcan's No. 1 which had been making around 100 bbls. a day from the deep lime at 5,004 feet has been frozen, and will now be cleaned out and brought back into production. When this is finished, the diamond drill will be moved to Spooner's No. 2, Section 24-20-3w5, which is drilling at 4,550 feet, about 100 feet above the lime, with a fair gas flow.

Stockmen Oils' No. 2, LSD 7, Section 27-20-3w5, is reported entering the Kootenays at 2,630 feet, after passing the point at which a fault was regarded as possible. Model Oils' No. 1, LSD 8, Section 22-20-3w5, is reported drilling around 2,600 feet, after entering the Dakotas at 2,300 feet. Mayland Oil Co., LSD 10, Section 17-19-2w5, is drilling in the lower Kootenays and close to the Home sand at 3,350 feet. United Oils' No. 2, LSD 2, Section 24-20-3w5, is drilling in the Kootenays at 4,100 feet. Freehold Oil Co.'s No. 1, SW, Section 3-21-3w5, is drilling at 2,050 feet.

New McDougall-Segur Oil Co.'s No. 2, LSD 14, Section 12-20-3w5, is drilling in a hard formation at 3,920 feet. Illinois-Alberta Oils' No. 2, same LSD, is drilling at 3,325 feet. British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is drilling at 1,800 feet. Regent Oil Co.'s No. 1, LSD 16, Section 1-20-3w5, is at 3,330 feet and running 8¼-inch casing. Advance Oil Co.'s No. 5, LSD 16, Section 19-19-2w5, is drilling in a hard formation at 2,610 feet. New Valley Oil Co., LSD 4, Section 6-21-2w5, is preparing to resume at 2,080 feet; this test got several shows of gas in the upper horizons and if commercial production were secured it would materially extend the field.

### On Morley Reserve

On the Morley Indian Reserve, Wabash Oils is reported drilling at 1,795 feet, approximately 315 feet in the deep lime. The gas pressure continues steady, but the formation is very hard. Melbourne Oils' test is shut down at 2,000 feet while a new driller is being secured. Watson Oil Co. has made a final location for its test in NE, Section 24-24-8w4, about 1,500 feet southwest of the Wabash, and will spud in this fall. Model Oils, which is drilling its No. 1 in the Turner Valley, has located its No. 2 1½ miles west and slightly north of the Wabash well. A derrick will be erected at once, and as soon as No. 1 is finished, the outfit will be moved to the Morley Reserve for No. 2 test. Russell V. Johnson of Calgary, consulting geologist for Model Oils, expects No. 2 test to get the top of the lime around 2,000 feet, the Dakota sands being exposed at this point, though this formation is thought to be 800 feet thicker than at the Wabash well.

In addition to the Watson Oil Co.'s test on the Russell lease, a Montreal syndicate has taken over from Cobb & Warren some 160 acres of the same lease, on a cash and royalty deal, and will spud in a test before July 1, 1929. The B. C. Syndicate has acquired acreage adjoining this tract.

In the Highwood district, Imperial-Highwood's No. 1, LSD 3, Section 36-18-2w5, has the diamond drill outfit rigged up ready to resume drilling at 3,624 feet.

In High River district, High River Oilfields, Ltd., is hauling derrick timbers for its test in Section 34-18-29w4. On the Rickert structure, the Turner-Wright Co., of Vancouver, British Columbia, is planning to spud in a test before November 1.

### Skiff Field

In the Skiff Field, southern Alberta, Devenish-Imperial's No. 2, LSD 11, Section 11-5-14w4, has been abandoned at 3,171 feet. The well was 3 miles south of No. 1 discovery well and somewhat higher on the structure, and production was looked for in the Ellis at around 2,900 feet. No. 1 got the top of the sand at 3,090 feet. It is reported that No. 2 went through some 20 feet of oil sand around the 2,900-foot level, but the sand was so tight that it did not carry oil in quantity. No. 2 was drilled with combination rotary-standard outfit, the job taking 67 drilling days, with 17 days for cementing. Imperial-Devenish's No. 3 will be started at once in LSD 4, Section 27-5-14w4, approximately 1,000 feet south of No. 1. The rig from No. 2 will be moved to the new location immediately, and dismantling has been already started.

In the Pincher Creek Field, southwestern Alberta, Alberta Gas & Fuel Co.'s No. 2 Doherty, Stephen Lunn farm, is drilling below 1,500 feet in a very hard formation. No. 3, located on the Cyr ranch 18 miles south of Pincher Creek, is reported rigged up ready to spud in. Standard tools will be used.

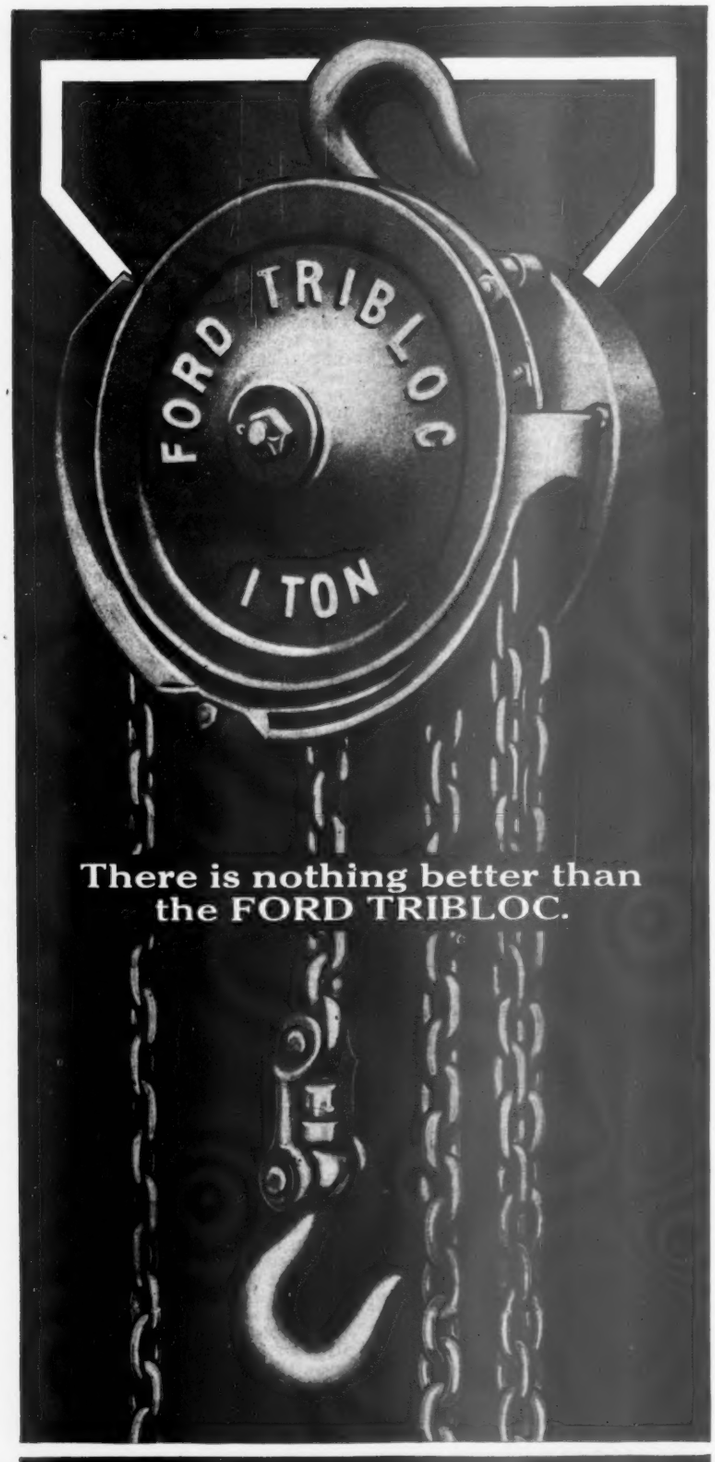
In Cypress Hills district, near Medicine Hat, Eagle Butte Oil Co.'s No. 1, LSD 3, Section 31-7-4w4, is reported drilling below 2,200 feet with 10-inch casing close behind the tools.

### Milk River Test

In the Milk River district, southern Alberta, Capitol Oils, Ltd., of Vancouver, has spudded in No. 1 test in LSD 4, Section 4-2-12w4, and is now drilling below 80 feet. The test has started with a 20-inch hole which will be reduced to 15½ inches after passing the surface formations. C. D. McRae is in charge. The location is 26 miles east of Coutts and about 6 miles north of the Montana boundary, and somewhat north and west of the Rogers-Imperial gasser. The company holds 13,900 acres on the Milk River structure. In the same area, Commonwealth Petroleums has located No. 1 test on the Madge farm, 6 miles east of Milk River and is reported spudding in. Collier & Sons of Kevin, Mont., have the contract.

On the Beaver Dome, Madison Oils' No. 1, LSD 10, Section 24-2-11w4, has resumed drilling in black shale at 425 feet, after running casing. On Chin Coulee, Lethalta Oils' LSD 5, Section 33-8-18w4, is reported drilling around

FORD TRIBLOCS




FORD CHAIN BLOCK CO., PHILA., PA.

3,000 feet. It is reported that 30,000 acres recently secured by F. W. Cole in the Taber district will be developed by British and eastern Canada interests. East of Coutts, Range Oil & Gas Co.'s No. 2, LSD 6, Section 21-1-11w4, is drilling at 295 feet.

On the Ribstone-Blackfoot structure, eastern Alberta, Meridian Oils, LSD 1, Section 16-45-1w4, is around 1,700 feet and running 8-inch casing.

In the Irma-Wainwright Field, Wainwell Oils' No. 2, LSD 15, Section 36-44-7w4, is shut down waiting for additional equipment. Blair & Stevens, contractors, are reported to have spudded in Wainwell's No. 3, LSD 9, Section 36-33-7w4, using rotary tools.

Fabyan Petroleums' No. 1, LSD 8, Section 24-45-8w4, has done additional core work, opening a deeper sand. It has been cemented preparatory to drilling in. Sasko-Wainwright Oil & Gas Co., LSD 1, Section 19-45-6w4, is standing cemented at 2,233 feet. Mid-Canada Oils, Section 13-45-6w4, is drilling intermittently and still in the upper horizons. Wainwright-Dome Oils is shipping machinery to place under its newly completed derrick in LSD 5, Section 18-45-6w4.

On the Ribstone-Blackfoot structure, London-Ribstone Syndicate's No. 1, LSD 14, Section 10-43-3w4, is testing at 2,130 feet. Anwood Oil Co. has a derrick up for a test to spud in this fall.

In Saskatchewan, Unity Valley Oil Co.'s No. 2, SE, Section 23-41-24w3, is reported drilling in the lime at 2,850 feet, after penetrating an oil-bearing sand at 2,250 feet. Production is looked for in the lime between 3,200 and 3,500 feet. Near Simpson, the Simpson Oil Co.'s test, Section 9-29-25w2, is drilling around 2,000 feet, with a possible sand looked for around 2,200 feet.

## LOUISIANA-ARKANSAS

(Continued from Page 49)

No. 6 Tremont Lumber Co. Randall and others' No. 1 Urania, Section 12-10-1e cemented 6-inch at 623 feet.

**Monroe District**

Morehouse Parish—Natural Gas Producing Co. started drilling No. 1 fee, Section 9-20-4 and has 12½-inch cemented at 180 feet; No. 12 Tensas, Section 15-22-4 cemented 6-inch at 2,151 feet. Stovall Drilling Co.'s No. 1 Etheridge 1,924 feet north and 380 feet east of the center of Section 22-20-4, is a new job, drilling around 150 feet.

Ouachita Parish—Jordan Drilling Co. cemented 8-inch at 827 feet on No. 1 Cole, Section 1-18-3 (formerly reported as No. 1 Coll) and G. E. Jordan's No. 1 Wall, Section 12-18-3, is fishing for drill stem, total depth 3,126 feet. Magnolia Petroleum Co.'s No. 1 Central Bank, Section 1-19-4, is shut down for orders after hitting a rock at 185 feet. Moody & Seagraves' No. 1 Phillips, Section 20-19-4, set 10-inch surface string at 156 feet and 8-inch at 769 feet. Stovall Drilling Co.'s No. 1 Lieber, Section 4-18-4, cemented 6-inch at 635 feet and is drilling at 1,005 feet. Union Consumers Gas & Producing Co. has derrick up for No. 2 Slaughter 3,962 feet south and 1,660 feet west NE cor. Section 24-19-4.

Union Parish—Feazel & Smith are drilling 6-inch plug from No. 1 Steele Section 16-20-4, at 2,100 feet. Moody & Seagraves have derrick up for No. 1 Dawkins in Section 17-20-4.

**Richland Parish**

Community Oil & Gas Co.'s No. 1 Boughton, Section 33-16-6, cemented 6-inch at 2,280 feet. Ouachita Natural Gas Co. got rig up on No. 2 C. J. Perdue, Section 6-15-6, set 12½-inch surface string at 212 feet and is drilling at 650 feet. Richland Operating Co. has rig up for No. 1 Taylor 3,472 feet east and 660 feet north SW cor. Section 24-16-6.

**Webster Parish**

Cotton Valley—Magnolia Petroleum Co. is cleaning out No. 5 Cox, Section 15-21-10 after a shot at 4,673 feet, total depth 4,800 feet. Ohio Oil Co. set 12½-inch at 466 feet on No. 42 Bodcaw, Section 27-21-10, and is drilling at 1,185 feet. Palmer Corp.'s No. 2 Tillkan, Section 28-21-10, is a rig. Superior Oil Co. set 9-inch casing at 3,628 feet on No. 1 McCook & Hibbler, Section 21-21-10, and is drilling at 3,700 feet.

Sarepta and Shongaloo—Jones and others' No. 1 Elkins, Section 33-23-9, made a show of about 1,000,000 feet of gas at 2,681 feet and is bailing to test a foot of sand, total depth 2,690 feet. Magnolia Petroleum Co. got rig up on Joe 1 M. M. Branton in Section 5-22-9 and is coring shale at 3,129 feet on No. 1 Lewis, Section 25-23-10; No. 1 Scroggins is a new location 330 feet north and east SW cor. NW NW Section 1-22-11. Northwest Louisiana Gas Co.'s No. 8 Pine Woods in Section 34-23-11 is coring at 3,090 feet.

### EAST TEXAS

**Harrison County**

McRitchie and others' No. 1 Baldwin in the E. M. Fuller Survey topped the Nacatoch, second gas sand, at 1,144 feet, and the chalk rock at 1,470 feet and is drilling at 1,900 feet.

**Panola County**

Beckman & Freeman have made locations for 3 more wells on the Burns farm; No. 4 set 10-inch at 43 feet and 6-inch at 1,021 feet; No. 5, located 660 feet north and east SW cor. Elijah Williams Survey, is staked and No. 6 is a location 660 feet south and 1,980 feet east NW cor. Alex Birdsong Survey. Magnolia Petroleum Co. is bailing No. 1 Lula Fletcher in the B. C. Jordan Survey for a test at 2,281 feet; No. 2 Steele in the same survey is drilling shale at 3,060 feet. Natural Gas Producing Co. cemented 10-inch at 100 feet on No. 2 Thomas Moore, a new job in the B. C. Jordan Survey; No. 7 Roquemore in the same survey is drilling cement from 6-inch set at 2,260 feet. The Texas Company's No. 6-A T. C. Adams in the B. C. Jordan Survey is

### ARKANSAS

**Johnson County**

Arkansas Natural Gas Corp. is drill- drilling shale and boulders at 930 feet. ing a hard sand at 2,095 feet on No. 1 Houston in Section 15-10-24; No. 1 O. L. Hudson in Section 14-10-24 is drilling a sand at 2,786 feet which is showing gas.

**Nevada County**

Humble Oil & Refining Co.'s No. 7-B Groves, Section 1-14-21, is waiting on standard rig to pump with the bottom at 1,125 feet, in 4 feet of sand; No. C-5 in the same section, set 44 feet 10-inch and is drilling at 525 feet; No. 1 Hein, also in the same section, the proposed 4,500-foot test, has rig up.

**Ouachita County**

Crosbie and others are drilling at 62 feet; 10-inch cemented at 64 feet on No 1 Primm, 300 feet north and west SE cor. Section 23-15-16, Smackover.

**Union County**

H. L. Hunt set 167 feet of 10-inch on No. 3 Gregory, Section 10-17-14, and i drilling at 1,083 feet. E. M. Jones' No. Sample, Section 7-17-13, set 155 feet 10-inch and is drilling at 1,338 feet. Lio Oil Refining Co. has rig up for No. Nash in Section 6-17-13; No. 4 Unio Sawmill in Section 7-17-13, set 150 fe of 10-inch and is drilling at 1,150 fee Magna Producing Co. has rig up fo No. 1 El Dorado Realty Co. 330 feet nort and east SW cor. NE SE Section 7-17-1 Magnolia Petroleum Co. tested salt wate at 2,738-50 feet in No. 2 Dumas. Sectio 11-17-14 and is coring at 2,752 fee Marine Oil Co.'s No. 2 Sample in Sectio 7-17-13 is a derrick and No. 3 in the sam section set 10-inch at 181 feet and is dri ing at 1,236 feet. C. E. Murdock h derrick up for No. 2 Union Sawmill C in Section 6-17-13 and No. 3 is a locatio in the same forty. Ohio Oil Co.'s No. Crain in Section 1-17-14 bailed dry 3,043 feet. set a long liner with one joi of perforated pipe at the bottom at 3,1 feet and is bailing for another test; No. same lease and section set 192 feet of 1 inch and is drilling at 450 feet; No. Frazier is a new location 260 feet sou and 275 feet west NE cor. SW SW Secti 6-17-13; No. 2 Nash, Account 1 set 10-in at 192 feet and is drilling at 425 feet; N 1 Nash, Account 2, in the same section. a rig, as is No. 3 on the same lease; No. Qard in Section 14-17-14 is coring 2,831 feet. J. W. Olvey set 157 feet

# *Taking the* WAIT *out of concrete*

## "INCOR" CEMENT

Thompson No. 1 of the Amarillo Gas & Oil Co., Texas. Ten inch casing cemented at 2500 feet with "INCOR."

Johnson No. 2 of T. M. Deal, Borger, Texas. Twelve inch casing cemented at 775 feet with 103 bags of Lone Star followed by 47 bags of "INCOR." Drilled through in five days. Perfect job.

DERRICK CORNERS, foundation beds, casings—all jobs where time out for cement or concrete to cure means delayed production—should be made with "INCOR." "Placed today, ready for use tomorrow"—that's the "INCOR" time schedule.

"INCOR" is the Perfected High-Early-Strength Portland cement. Cement work done with "INCOR" is ready to use in 24 hours.

With "INCOR" a well goes into production in a matter of days instead of weeks. For your next job specify "INCOR". It will show you speed that has a money value.

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LOUISIANA PORTLAND CEMENT CO. New Orleans Louisiana
ARGENTINE PORTLAND CEMENT CO. Buenos Aires Argentina
TEXAS PORTLAND CEMENT CO. Dallas and Houston Texas
URUGUAY PORTLAND CEMENT CO. Montevideo Uruguay

# ECONOMY
## that counts!

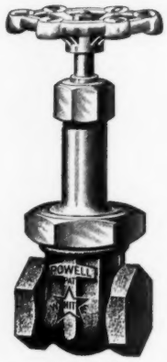


Fig. 1375
White Star
Gate Valve

HOW many times have you installed a valve only to find that in a few days or weeks it leaked and had to be replaced?

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They are built to withstand your hardest service. Owing to their renewable features, after the extraordinary long life of the valve has ended, new seats and discs can be procured and the valve reconditioned for another long period of usefulness.

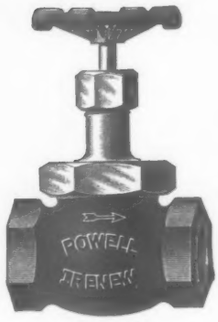


Fig. 190
Irenew
Globe Valve

Fig. 102
White Star
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We manufacture a complete line of bronze, iron, and steel, globe, angle, cross, gate, safety and check valves; also oilers, lubricators, grease cups, water and oil gauges, etc.

Our circulars tell you all about our valves and kindred engineering appliances.

Change to—Standardize on

**POWELL VALVES**

THE WM. POWELL COMPANY
2525 Spring Grove Ave.
CINCINNATI, OHIO


10-inch and is reaming to bottom on No. 1 Sample, Section 7-17-13, total depth 1,740 feet. Rovenger Oil Corp. is running a string of cable tools cleaning out No. 4-A Perdue in Section 10-17-14, total depth 2,352 feet.

Smackover—Simmons and others tested salt water at 2,335 feet on No. 1 Green, Section 3-16-16, and are recementing 5 3/16-inch pipe at 2,328 feet to cure the leak.

## SOUTHWEST TEXAS

(Continued from Page 46)

and Alexander & Smith are rigging up for No. 1 Eliff 1 mile north and a little east of the discovery well.

### COMPLETIONS

**Caldwell County**

Roxana Petroleum Corp.'s No. 4 Jolly, Cornelius Crenshaw Survey, Roxana-Larramore Field, completed at 1,314 feet as small oil well.

**Duval County**

Schoolfield-O'Byrne-Pearson's No. 1 Krauter, Survey 250, Block 20, new Schoolfield-O'Byrne Field, completed at 2,344 feet flowing 40 bbls.

**Refugio County**

Sun Oil Co.'s No. 1 John Buckley, Refugio gas field, completed at 3,657 feet dry gas well with 1,350 pounds rock pressure.

**San Patricio County**

Saxet Oil Co.'s No. 16 White Point Gas Co. in White Point gas field has been completed at 2,180 feet, an average gas well of the field, and turned into pipe line.

**Webb County**

Rycade Oil Corp.'s No. 2 Yeager-Strohman, Share 5, Albercas Field, completed at 2,170 feet as 45,000,000-foot gas well with 490 pounds rock pressure.

Houston Oil Co.'s No. 5-D Benavides, Survey 753, Block 13, Magnolia-Cole Field, completed at 2,339 feet, is making 100 bbls.

Houston Oil Co.'s No. 16-D Benavides, Survey 753, Block 12, Magnolia-Cole Field, has been completed at 2,347 feet making 150 bbls.

**Zapata County**

O. W. Killam's No. 4 Cuellar, Cerrito Blanco grant, new Jennings Field, completed at 1,475 feet making 150 bbls.

### ABANDONED TESTS

**Bastrop County**

Sun Oil Co.'s No. 1 E. C. Keicke, Solomon Duty Survey No. 9, topped chalk at 1,423 feet and has been abandoned dry at 2,200 feet.

**Caldwell County**

Roxana Petroleum Corp.'s No. 5 Jolly, Cornelius Crenshaw Survey in the Roxana Field, location only has been abandoned.

Detex Oil Co.'s No. 1 Hardeman, 4 miles north of Luling, has been abandoned dry at 3,075 feet.

Luling Oil & Gas Co.'s No. 3 Carter, Gerren Hinds Survey, 300 feet north of No. 1, at 2,782 feet cored Edwards showing sulphur water with trace of oil and is abandoning test.

**DeWitt County**

Alexander & Smith's No. 1 Dolgner, P. Dowlearn Survey, has been abandoned dry at 4,008 feet.

**Edwards County**

Magnolia Petroleum Co.'s No. 2 Whitehead, Section 88, G.C.&S.F. Survey, Block D, has been abandoned at 2,190 feet.

**Medina County**

Cecil Switzer's No. 1 Zerr, Survey 459, has been abandoned dry at 3,487 feet and is pulling casing.

**Webb County**

William R. Jewell's No. 3 Bruni, Block 56, Albercas Field, at 2,181 feet tested some oil, gas and salt water and has been abandoned.

### NEW LOCATIONS

**Caldwell County**

Lutex Oil, Inc.'s No. 3 Frank Davis, A. Floyd Survey, Joe Bruner Field, 150 feet to northeast and southeast lines of lease, is rigging up.

Lutex Oil, Inc.'s No. 3 Davis, A. Floyd Survey, Bruner Field, is location 300 feet west of No. 1 Davis, discovery well of the field in the Austin.

Sun Oil Co.'s No. 2 Malone, A. Floyd Survey, Joe Bruner Field, 300 feet northwest of No. 1 and 150 feet to southwest lines of tract, has been spudded in and set surface casing.

Lonnie Glasscock has derrick up for test in the Pablo Martinez Survey in Lytton Springs Townsite, 600 feet northwest of discovery well.

Witherspoon Oil Co. has derrick up for test in the Pablo Martinez Survey in the Lytton Springs Townsite.

Cranfill & Reynolds' No. 1 Yost is moving in machinery.

Abercrombie & Co.'s No. 1 Lida Moses, A. Floyd Survey, Joe Bruner Field, 150 feet to north and west lines, has set 300 feet of surface casing.

**Gonzales County**

Joe Bruner's No. 1 R. D. & J. C. Miller, Richard Heath Survey, three-quarters of a mile north of Waelder, has derrick up and rig on the ground.

**Guadalupe County**

Brodie and others' No. 1 B. B. Dix, Ira Nash Survey, 610 feet north of road and 320 feet to east line, has derrick up and rig moving in.

**Duval County**

Schoolfield-O'Byrne & Pearson's No. 2 Krauter, Survey 250, Block 21, new Schoolfield-O'Byrne Field, is rigging up 550 feet to east line and 150 feet to south line.

The Texas Company's No. 1 Hahl, Survey 250, Block 18, same field, 150 feet to north and west lines, is rigging up.

**Medina County**

Donaldson Oil Development Co. is making location for test, 3 miles west of Devine.

**San Patricio County**

LaPrelle's No. 1 White Point in the White Point gas field is drilling at 1,910 feet in gumbo.

Saxet Oil Co.'s No. 1 Katz, White Point gas field, is drilling at 3,000 feet.

**Webb County**

Magnolia Petroleum Co.'s No. 13 Yeager-Strohman, Share 5, Albercas Field, 150 feet to west line and 750 feet to south line, is rigging up.

Houston Oil Co.'s (Rycade) No. 2-A Yeager-Strohman, Share 5, Albercas Field, elevation 830 feet, is location 381 feet to north line and 2,248 feet to east line of Rycade's 632 acre lease.

O. W. Killam's No. 26 Bruni, Block 64, Albercas Field, is drilling at 800 feet.

**Zapata County**

O. W. Killam's No. 6 Cuellar, Cerrito Blanco grant, Cuellar tract, has derrick up on 160-acre lease.

**Cole Gas Field—Duval**

O'Hern & Seacord's No. 6 Benavides, Survey 172, located 3,125 feet to north and west lines, is drilling at 1,965 feet.

**Humble-Reiter-Foster Field**

Humble Oil & Refining Co.'s No. 10 Kohler, Survey 166, located 165 feet to east line and 1,605 feet to south line, is rigging up; No. 11 Kohler, Survey 395, is location 1,155 feet to north line and 165 feet to west line.

**Schoolfield-O'Byrne Field**

Magnolia Petroleum Co.'s No. 1-B C. W. Hahl, Survey 61, located 3,081 feet to east line and 150 feet to south line, is drilling at 1,275 feet; No. 2-B Hahl, Survey 51, located 150 feet to south and east lines, has been spudded in. Sun Oil Co.'s No. 1 W. P. Norton, Survey 250, located 150 feet to south and east lines, is moving in machinery; No. 1 Henne-Winch, Survey 250, located 150 feet to south and west lines, is fishing at 1,860 feet for drill pipe. Schoolfield-O'Byrne & Pearson's No. 1 Bowe, Survey 250, Block 21, located 150 feet to north and east lines, is moving on; No. 1 Krauter, Survey 250, Block 20, located 150 feet to north and east lines, at 2,342 feet is standing 450 feet in oil and showing no water.

**Alworth Pool**

Alworth-Stevens-Hild's No. 13 M. Garza, Survey 39, Block 9, located 115 feet to northwest lines and 670 feet to northeast lines, is testing at 1,022 feet.

**Randado Field—Jim Hogg**

Magnolia Petroleum Co.'s No. 40 Merchants State Bank, Survey 415, located

3,160 feet to west line and 200 feet to south line, is coring at 1,283 feet. T. J. Conway's No. 1 C. Palacious, Survey 232, Block 6, located 175 feet to north and east lines, is rigging up.

**Reiser Field—Webb**

Marts & Beavins' No. 1 Johnson, Survey 1,617, Block 9, located 500 feet to north line and 100 feet to west line, is drilling at 1,500 feet. R. C. Holsworth's No. 1 Wheatley, Survey 1,569, Block 3, located 847.7 feet to north line and 305.2 feet to east line, is standing at 1,481 feet.

**Mid-Ojuelos Pool**

Aviator Gas Co.'s No. 1 E. Garcia, Survey 606, Block 11, located 150 feet to south and east lines, is drilling at 720 feet.

**Albercas Field**

O. W. Killam's No. 25 Bruni, Block 64, located 1,002 feet to north line and 1,247 feet to east line, at 2,367 feet is fishing for drill stem; No. 1-M Bruni, Block 11, Bruni Subdivision, 1,470 feet to north line and 293 feet to west line, is rigging up. Magnolia Petroleum Co.'s No. 11 Yeager-Strohman, Share 5, located 450 feet to east line and 150 feet to south line, is drilling at 1,250 feet. Rycade Oil Co.'s No. 2 Yeager-Strohman, Share 5, located 150 feet to north line and 450 feet to east line, has sand at 2,158-62 feet. Houston Oil Co.'s (Rycade) No. 2-A Yeager-Strohman, Share 5, located 381 feet to north line and 2,248 feet to east line, is location. William R. Jewell's No. 3 Bruni, Block 56, located 700 feet to east line and 165 feet to north line, has sand at 2,171-76 feet and is testing on tester. Sun Oil Co.'s No. 5-B Yeager-Strohman, Share 5, located 150 feet to north line and 450 feet to east line, is rigging up; No. 4-B Yeager-Strohman, Share 5, located 150 feet to south line and 450 feet to east line, is rigging up.

**Aviator Field**

G. C. Salley's No. 1 Puig, Carter-Pinkton tract of Puig ranch, 220 feet to west line and 150 feet to south line, is rigging up. Suladie & Mimms' No. 1 Puigg, 450 feet to east line and 155 feet to north line of Puig (Kirkpatrick) 160-acre tract, is rigging up.

**Carolina-Texas Field**

Usher Carson's No. 5-D Webster, NW SE, Survey 684, located 150 feet to north and west lines, at 2,621 feet total depth is standing 250 feet in oil. C. R. Miller's No. 1 de la Garza, Survey 48, Block 47, located 150 feet to north and east lines, is standing at 1,000 feet.

**Andrews Field**

Gleason Oil Co.'s No. 2 Benavides, Survey 11, Block 11, located 300 feet to northwest lines and 250 feet to northeast lines, is standing at 1,000 feet due to water shortage.

**Magnolia-Cole Field**

Cole Petroleum Co.'s No. 65 Benavides, Survey 412, Block 4, located 1,060 feet to west line and 160 feet to north line, has derrick up. Houston Oil Co.'s No. 4-D Benavides, Survey 753, Block 13, is location 160 feet to south line and 822.5 feet to east line; No. 5-D Benavides, Survey 753, Block 13, located 160 feet to south and west lines, is bailing at 2,339 feet; No. 15-D Benavides, Survey 753, Block 12, is location 662 feet to south line and 160 feet to west line; No. 16-D Benavides, Survey 753, Block 12, located 160 feet to north and west lines, has sand at 2,336 feet and set casing; No. 17-D Benavides, Survey 753, Block 5, is location 160 feet to south and west lines.

Magnolia Petroleum Co.'s No. 10 Valdez, Survey 16, located 150 feet to south line and 1,150 feet to west line, is drilling at 220 feet; No. 12 Valdez, Survey 754, Block 16, is location 750 feet to south line and 650 feet to west line.

**Jennings Pool—Zapata**

O. W. Killam's No. 4 Cuellar has sand at 1,469-72 feet (location 943 feet to northwest lines and 1,030 feet to southwest lines of 160-acre Cuellar tract in Cerrito Blanco grant); No. 5 Cuellar, same grant and tract, 1,000 feet to southeast lines and 670 feet to southwest lines, has derrick up. South Texas Production Co.'s No. 1 Jennings, same grant, 8,890 feet to southwest lines and 8,750 feet to southeast lines, is drilling at 25 feet. Killam-Duggan's No. 3 Cuellar, same grant, 3,037 feet to northeast lines and 3,300 feet to northwest lines, is drilling at 1,800 feet after testing sand at 1,447-61 feet showing gas with oil odor, and another sand at 1,607-10 feet showing gas and salt water.

**Somerset Field—Atascosa**

Witherspoon Oil Co.'s No. 1 Pue is drilling at 800 feet.

**Roxana-Larremore Field—Caldwell**

Roxana Petroleum Corp.'s No. 1 Wilms, Cornelius Crenshaw Survey, 150 feet to north and west lines, is location.

**Luling Field**

M. W. Koening's No. 7 Tiller, John Henry Survey, 300 feet east of No. 6, is drilling at 1,700 feet. Magnolia Petroleum Co.'s No. 13 W. J. Tiller, John Henry Survey, 150 feet to southwest lines and 450 feet to southeast lines, is location; No. 8 W. Branyon, Nancy Reaville Survey, SE cor. of survey, is drilling at 1,795 feet; No. 1-B A. J. Brown estate, John Henry Survey, 418 feet to northwest lines and 32 feet to southwest lines, is drilling at 2,140 feet.

**Joe Bruner Pool**

Pat Armstrong's No. 1 E. Martin, A. Floyd Survey, 150 feet to northeast lines and 410 feet to southeast lines, is drilling at 2,200 feet. Carl Brothers-Suttle's No. 1 C. W. Malone, A. Floyd Survey, 150 feet to northwest and northeast lines, at 2,554 feet has been shot with nitroglycerin and is going on the pump. Golden West Oil Co.'s No. 1 Cook, A. Floyd Survey, 480 feet to northeast lines and 170 feet to northwest lines, has set casing at 2,226 feet and will test Austin before drilling to the Edwards; No. 2 J. Wilson, A. Floyd Survey, 150 feet to northwest and northeast lines, at 2,717 feet has replaced rig and is flowing oil with tools in the hole from Edwards topped at 2,698 feet; No. 3 J. Wilson, A. Floyd Survey, 450 feet to northwest lines and 150 feet to southwest lines at 2,685 feet is drilling and flowing oil from the Edwards. T. C. Hadley's No. 1 Tiller, Gerren Hinds Survey, at 2,619 feet is swabbing to test production in the Austin and if it makes only a small well will deepen to the Edwards; No. 2 Wilson, J. Radford Survey, is drilling at 2,540 feet in chalk. M. S. Holladay's No. 1 Bouldin, 4 miles northeast of Luling, is at 3,070 feet shut down. Larson-Walsh's No. 1 Fred Watson, Solomon Seal Survey, 150 feet to northeast and southeast lines, at 2,749 feet total depth is rigging up to shoot 150 feet of Austin, total 250 feet of the formation and the hole before shooting, is standing 450 feet in oil. Luling Oil & Gas Co.'s No. 3 Carter, 300 feet north of No. 1 in Gerren Hinds Survey, at 2,730 feet is coring in Georgetown. Lutex Oil, Inc.'s No. 2 Wilson, A. Floyd Survey, 150 feet to northwest and northeast lines, at 2,710 feet is setting liner and is flowing some oil. Plum Creek Oil Co.'s No. 1 E. L. Mayton, Hector McNeil Survey, in center of survey, at 240 feet has set surface casing and moved rig off to another test. Radcliffe and others' No. 1 Cora Malone, A. Floyd Survey, 150 feet to north and west lines, at 1,200 feet had gas flow out and is making a drill stem test. M. K. Towns' No. 1 W. W. Hickman, Gerren Hinds Survey, 150 feet to north and west lines, is building derrick and moving in rig. Wheelock & Collins' No. 1 Orphanage, Isaac Weldon Survey, 150 feet to south and east lines, is drilling at 2,600 feet in the Taylor marl.

**Lockhart Area**

Pat Armstrong's No. 1 Heidenheimer, J. R. Miller Survey, 450 feet to north line and 150 feet to east line of lease, is location. The Texas Company's No. 1-B F. M. Branyon, John R. Miller Survey, 150 feet to north line and 239 feet to west line, at 2,206 feet is fishing for bailer.

**Luling Field—Guadalupe**

A. B. A. Oil Co.'s No. 4 Britton Harris, 300 feet to east line and 190 feet to south line of Britton Harris tract, is shut down at 1,250 feet for repairs on the boilers. Magnolia Petroleum Co.'s No. 7

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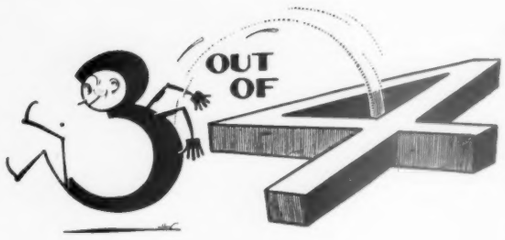


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J. M. Roberts, Harriett Cottle Survey, is location 150 feet to southwest and southeast lines of the lease; No. 4 N. J. Carter, H. Cottle Survey, 150 feet to northwest and northeast lines, is drilling at 1,772 feet.

**Kingsville Field—Kleberg**

Humble Oil & Refining Co.'s No. 4-B Dennett, Section 38, Lot 19, in sand at 2,314 feet tested salt water; No. 4 Flato, Section 40, Lot 10, located 250 feet to east line and 450 feet to north line, has set casing at 1,779 feet.

**Three Rivers Area—Live Oak**

W. J. Walton's No. 3 C. H. Wedding, 300 feet to west of No. 2, is coring at 1,578 feet for sand.

**Agua Dulce Field—Nueces**

Alexander and others' No. 1 J. J. Elliff has derrick timbers on the ground; No. 2 J. J. Elliff is location. Davis-Horn & Maddox' No. 1 Thomas Ragland, Manton & Briggs Subdivision, SW cor., Lot 13, is building derrick. Agua Dulce Oil & Gas Co.'s (formerly Grimm & Morris) No. 1 John O. Sponberg, George H. Paul Subdivision, SW SW, Section 87, is moving on. Houston Oil Co.'s No. 1 Talbert, Survey 2, Block 5, located 1,139 feet to north line and 155 feet to west line has set surface casing at 550 feet. R. & G. Corp.'s No. 1 H. G. Yakey, Richard King Survey, is location in SW cor., Section 37; No. 1 Ed Allen, Section 6, NW cor., Roos Peters Subdivision, is building derrick; No. 1 Bessie Kerr, Benton Pastures, is location in NE cor. of Section 36.

**Saxet Field**

Saxet Oil Co.'s No. 4 Weil Brothers, located 1,320 feet south of No. 1, has derrick up; No. 5 Dunn, located 1,500 feet southwest of No. 1 Dunn, the discovery well of the field, is location.

**Refugio Field—Refugio**

Benedum & Trees' No. 2 Claude Heard, 300 feet west of the discovery oil well of the field, is moving in rig; No. 3 Claude Heard is located 300 feet south of the discovery oil well and is moving in rig. Houston Oil Co.'s No. 9 F. B. Rooke, T. Mullen Survey, 150 feet to south and east lines, is rigging up; No. 10 F. B. Rooke, T. Mullen Survey, northwest of discovery oil well, is rigging up; No. 11 F. B. Rooke, T. Mullen Survey, is location 150 feet to east lines and 350 feet to south line and is rigging up; No. 4 Wilson Heard at 4,606 feet is drilling in hard shale and sandy lime topped at 4,580 feet. Pat Rutherford and W. L. Pearson's No. 1 J. M. O'Brien, is drilling at 4,000 feet. George E. Smith's No. 1 Rose Rogers is drilling at 4,000 feet after testing only little gas at 3,704 feet. Texas Gas Co.'s No. 1 Holmes Heard is drilling at 3,700 feet in top of sand.

## SOUTHWEST WILDCATS

(Continued from Page 46)

deepest wells ever drilled. No. 1 Chittim at around 5,660 feet got 28,000,000 feet of gas and 75 bbls. of oil. There is talk of starting an offset well, it having been abandoned at about 6,000 feet.

**Webb County**

William R. Jewell's No. 1 J. M. Gutierrez, Survey 857, Block 8, located 150 feet to south and east lines, is standing at 80 feet. Louis Hausman and others' No. 1 Callaghan, Survey 440, located 166 feet to south line and 1,482 feet to east line, is standing at 820 feet. Baku Oil Co.'s No. 1 A. M. Bruni, Survey 735, Block 7, located 450 feet to north line and 150 feet to east line, has set 10-inch casing at 40 feet. O. W. Killam's No. 5 Billings, Survey 712, is drilling at 100 feet (location will be announced later). Suladie and others' No. 1 Neal, Survey 1,008, located 2,490 feet to south line and 150 feet to east line is location.

**Zapata County**

National Oil Co.'s No. 1 Don B. Adams, C N half, Section 11, Block 4, is moving in machinery. R. V. Hill's No. 3 Ramirez, Survey 627, is drilling at 750 feet (location will be announced later).

**Bastrop County**

Gypsy Producing Co.'s No. 1 Lottman estate is shut down at 2,146 feet. A. A. Loomis is making location in John W. Bunton Survey. Col. Billy Mayfield's No. 1 McColl, Stephen F. Austin Survey, 450 feet south of river and 750 feet to east line of farm is deepening from 592 feet. John Storey's No. 1 Ed Pendergrass, J. B. Blalock Survey, center of tract, is moving in machinery.

**Bexar County**

Humble Oil & Refining Co.'s No. 1 D. & A. Oppenheimer, 450 feet east of Pleasanton Road and 750 feet to south line of tract is in shale at 1,050 feet. Marland Oil Co.-Sun Oil Co.'s No. 1 J. B. Stewart, Manuel Monjarias Survey, 200 feet to northeast and southeast lines of east corner of E. B. Simmons farm, is in chalk at 2,358 feet and drilling, showing a little gas.

**Blanco County**

C. W. Bates' No. 1 Herman Massey, Henry Manton Survey, 920 feet to north line and 660 feet to east line is shut down at 214 feet. Robert A. Rodson's No. 1 Glasscock, Survey 50, located 150 feet to CEL is drilling at 835 feet.

**Caldwell County**

Fred Adams & Lyles' No. 1 Oran W. Cliett, S. B. Morrison Survey, 4,800 feet to southwest and northeast lines is drilling at 1,400 feet with chalk topped at 1,259 feet with a trace of oil and gas. Fred Adams' No. 1 Burney, Gideon Pace Survey, is moving in machinery. Bartlett Brothers' No. 1 C. N. Martindale, William G. Steffy Survey, 490 feet to northeast line and 972 feet to northwest lines is rigging up. John V. Edwards' No. 1 W. C. Caldwell, Cornelius Crenshaw Survey, 300 feet to east line and 600 feet to south line is moving in machinery. Russell-Hill's No. 1 Hill, McCullough Survey, is drilling at 175 feet. The Texas Company's No. 1 D. T. Lackey, George W. James Survey, 1½ miles south of the Dale Field, is location.

**Comal County**

George Kruger's No. 1 Uecker, A. Gayton Survey No. 198, located in SE cor. is drilling at 100 feet.

**Colorado County**

National Oil Co.'s No. 1 H. T. Brandt, Freeman Pettus League, is location 150 feet to south line and 1,000 feet west of the highway.

**DeWitt County**

Empire Southern Oil Co.'s No. 2 Smith, Survey 3, is shut down at 3,150 feet. Pilgrim Oil Co. has let contract for derrick in the William G. Hill Survey, miles west of Yorktown.

**Dimmitt County**

G. W. Morgan's No. 3 City National Bank, Section 25, is location 600 feet east of No. 1.

**Edwards County**

McMan Oil & Gas Co.'s No. 1-B Walter Schreiner, H.E.&W.T.R.R. Survey, Section 50, Block F, 330 feet to south and east lines is shut down at 2,130 feet in shale. Segale Oil Co.'s No. 1 Neal, G. &S.F.R.R. Survey No. 2, located 1,0 feet to north line and 740 feet to east line is moving in rig.

**Frio County**

Fred Charleboix' No. 1 Escenbury, Edward Gallagher Survey No. 789, is location 500 varas to north line and 1,2 varas to west line. Pilgrim Oil Co. No. 2 Blackaller, James Gouley Survey, is at 3,218 feet unable to get core due to formation being hard.

**Fayette County**

Marshall & Moore Oil & Gas Co.'s No. 1 John A. Kerr (formerly Cole), Muldoon League, 150 feet to south and west lines is drilling at 1,800 feet. National Co.'s No. 1 J. C. Melcher, S. M. William League, 300 feet to north and east lines has completed rigging up. R. E. Phalen No. 1 Cervenka, Fayette County School Lands, Blocks 97 and 102, is drilling at 2,145 feet.

**Goliad County**

J. E. Alexander's No. 1 Campbell, mile north of Goliad, is drilling at feet. C. W. Simpson's No. 1 Ideus, H. Pendleton Survey, is shut down at 2,323 feet.

**Gonzales County**

Dunning & Pierce's No. 1 Mrs. Mat Keepers, R. Ward Survey, is standing 203 feet. W. D. Flynn's No. 1 W hausen, S. Bateman Survey, is drill at 4,800 feet. W. G. Malone's No Mrs. D. G. Staton, J. M. Salinas

vey, 375 feet to southwest lines and 1,275 feet to northwest lines is shut down at 400 feet. George Sullivan's No. 1 Norwood, Winslow Turner Survey No. 3, located 2,080 feet to northeast lines and 2,410 feet to northwest lines is drilling at 650 feet. L. P. Unkel's No. 1 Lumm & Bouldin, R. Ward Survey, Block 10, located 570 feet to CSL is shut down at 380 feet. The Texas Company's No. 2 Bateman, A. Zumwalt Survey, is drilling at 250 feet.

**Guadalupe County**

J. J. Christie's No. 1 Taylor Thomas, Gustavus Chotwell Survey, 1,100 feet to southwest lines and 1,130 feet southeast lines is drilling at 923 feet. T. H. Poole's No. 1 C. Woehler, John King Survey, 310 feet to north line and 210 feet to east line is rigging up.

**Hays County**

Estess-Moore & King's No. 1 C. N. Sledge, Hunton & Jones Survey, 285 feet to northwest lines is drilling at 804 feet. J. E. Rodger's No. 1 Earnest Hohenburg, 2½ miles east of San Marcos, is standing at 2,189 feet.

**Jackson County**

J. B. Douglas' No. 1 C. O. Lowrance, John McHenry Survey, 720 varas to northwest lines and 3,700 varas to southwest lines is drilling at 2,700 feet. The Texas Company's No. 1 W. C. Moore, I.&G.N. Survey No. 208, located 5,108 feet to south line and 150 feet to west line is drilling at 2,385 feet. Wright Brothers' No. 2 Classen, 1,500 feet north, 10 degrees west of No. 1, is drilling at 2,850 feet; No. 7 Drushel, 900 feet due east of No. 3, is drilling at 2,388 feet.

**Jim Wells County**

Cushing Oil & Gas Co.'s No. 2 M. Perez, La Tinaja de Lara grant, 4,319 feet to west line and 455 feet to north line is coring at 2,160 feet for formations are changing.

**Karnes County**

Frank M. Swacker's No. 1 Butler, has derrick up and moving in the rig. This test was first announced as Reynosa Oil Corp.'s No. 3 Butler.

**Kinney County**

Mardon Oil Co.'s No. 1 Jim Clamp, Survey 346, Section 1,492, is drilling at 1,900 feet in Buda lime topped at 1,878 feet.

**Maverick County**

Rycade Oil Co.'s No. 3 Sullivan, Section 71, Block 7, is drilling at 3,605 feet in hard lime; No. 2 Chittim, Section 158, Block 7, has completed fishing job and is drilling again at 7,400 feet.

**Medina County**

California-Medina's No. 1 Rothe, Survey 1,012, at 3,278 feet has milled out bailer and are on bottom. Carl G. Cromwell's No. 1 Taylor, Section 135, Block 28, located 210 feet to north line and 155 feet to east line is shut down at 350 feet. Holt & Cromwell's No. 1 Mott, Survey 1,267, is location 2,250 feet to east line and 4,182 feet to south line; No. 1 Henry Batot, 4 miles southwest of Hondo, is shut down at 400 feet. Milton & Webster's No. 1 Crabtree, 1 mile west of Hondo, is rigging up. North & South Development Co.'s No. 1 Charles Nehr, 8 miles south of D'Hanis, has derrick up and rig on the ground. W. R. Painter's No. 1 Muennink, Survey 367, at 830 feet has set casing with 12 feet of sand at 845-57 feet showing oil. W. T. Richardson's No. 1 Bendele, Survey 593, located 150 feet to south line and 1,000 feet to west line has resumed drilling at 937 feet. Cecil Switzer's No. 1 Zerr, Survey 459, at 3,487 feet is standing, unable to pull casing.

**Nueces County**

Alamo Drilling & Leasing Co.'s No. 1 Gallagher, Survey 158, located 1,215 feet to north line and 650 feet to east line is drilling at 2,500 feet in bluish-gray gumbo. Nueces River Basin Development Co.'s No. 1 Allen, G. Farrier Survey, 1,596 feet to south line and 474 feet to west line at 2,714 feet cored a hard sand showing gas on ether test and will make drill stem test.

**Refugio County**

Dunlap & Wilkinson's No. 1 Rooke, 10 miles south of the field, 1 mile north of Arkansas River and 700 feet west of the railroad, will drill deeper from 2,750 feet. J. M. Davis and Tom Horn's No. 1 Howard, Section 8, located 600 feet to north line and 2,640 feet to east line has set and cemented surface casing at 417 feet. W. L. Pearson's No. 1 Mitchell, several miles northwest of the proven field, is rigging up.

**San Patricio County**

C. I. Albertson's No. 1 Boscamp, W. R. Hazen Survey, Block 10, at 200 feet to CNL is standing at 1,420 feet. George Pickett's No. 1 Whitworth, NW NW, Section 60, is shut down at 3,250 feet; No. 1 Garrett is shut down at 3,030 feet. F. P. Zoch's No. 1 F. C. Andrews, Block 7, Welder & Odem Subdivision, is drilling at 2,287 feet.

**Uvalde County**

Pure Oil Co.'s No. 1 J. D. Smythe, Survey 687, located 740 feet north and 146 feet east of SE cor. of Survey 20, is drilling at 4,608 feet in shale.

**Victoria County**

Houston Oil Co.'s No. 1 McFaddin, Survey 14, located 600 feet to northwest lines and 1,600 feet to southwest lines has set casing at 718 feet.

## LA.-ARK. WILDCATS

(Continued from Page 49)

first wildcat east of Champagnolle, also was dropped as a salt water hole at 3,251 feet. It has been deepened from 3,179 feet, where it was a salt water test in April.

Tidal Oil Co., which has had an office in Shreveport for land and geological departments' work for the last few years, but has not done any drilling, has taken over the block of approximately 2,500 acres leased up by D. M. Lide of Shreveport and will drill the well Lide started two weeks ago on the McCrary farm in Section 23-19-16, about 4 miles south of Mooringsport. Location is on a machine high, the northernmost of a string of such extending northeast by north from the Waskom gas field in Harrison County, Texas, through the Greenwood gas district of Caddo Parish. Lide made his location October 4 and the Tidal began drilling October 20 and is below 200 feet with 12½-inch set at 100 feet.

**Dry Hole at Bellevue**

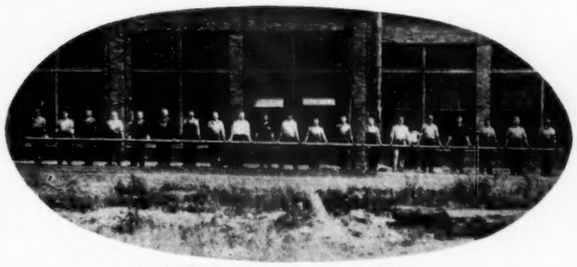
Morgan Oil Co. has abandoned No. 1 Smith, a deep test on the southwestern flank of the Bellevue Dome in Section 26-19-11 as a dry hole at 1,838 feet. It was drilled to test possibilities of deeper strata of the Bellevue structure and was dry at 1,044 feet and cored a water sand from 1,150-52 feet, the only two sands encountered. Derrick will be skidded and another shallow test begun in the near future.

Dixie Oil Co.'s wildcat, 14 miles east of the old Homer Pool in Claiborne Parish, No. 1 Gilbert in Section 27-21-5, found the top of the Nacatoch, the shallow producing sand in Homer, at 2,200 feet, around 300 feet lower than in Homer, and is making hole. It will go 5,000 feet unless production is found beforehand. Thorpe and others have assembled a block just north of Homer production and have a location in Section 19-21-7, which they plan to go 3,000 feet.

Atlantic Oil Producing Co.'s No. 1 Moffatt in Section 28-16-8, Ashley County, tested dry at 3,258-61 feet and is drilling sand rock at 3,360 feet. The Texas Company's No. 1 Gay in Section 32-16-4, 25 miles east, was abandoned in red granite at 3,187 feet.

**Gas Line Projects**

Unverified rumors have been heard here to the effect that the Arkansas Natural Gas Corp. is contemplating a 20-inch line from the Richland and Monroe gas fields to connection in Caddo Parish with its main line to Little Rock. If so, this will be the third line of like size into Monroe and Richland from the west to be projected this summer. The first, Magnolia Gas Co.'s, is in service and contractors are figuring on bids for the second, Moody & Seagraves', which will hook into the northwest Louisiana-Houston line just south of Mooringsport. Meanwhile, Moody & Seagraves have received 19 cars of pipe for the Alto-Sterlington section which they are build-

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ing themselves before the winter rains raise the creeks and bayous in the lowlands which that section of the line traverses. Magnolia Gas Co. has begun taking gas from R. O. Roy's No. 1 Fuller in Section 6-13-13, DeSoto Parish, at the rate of approximately 4,000,000 feet per day, routing it to the Latex-Beaumont line by a roundabout hook-up through the old Naborton Field. A 10-inch line from Roy's block west to Latex compressor station is in prospect.

**NORTH LOUISIANA**

**Bienville Parish**

W. G. Gray is drilling No. 1 Johnson, Section 21-18-6, below 10-inch casing set at 200 feet.

**Bossier Parish**

Morgan Oil Co.'s No. 1 Smith, Section 26-19-11, is drilling at 1,838 feet. Triangle Drilling Co.'s No. 1 Bulkley, Section 9-20-13, is shut down for orders at 3,125 feet after testing salt water in 9 feet of sand at that depth.

**Caddo Parish**

Gulf Refining Co. is drilling shale and lime at 4,127 feet on No. 1 Attaway, Section 1-18-15. Tidal Oil Co. has taken over D. M. Lide's block and well in Section 23-19-16, and is drilling around 250 feet with 12½-inch surface string cemented at 100 feet. Woodley Petroleum Co. has rig up for No. 1 Whitehurst in Township 16, Range 12, 23,850 feet east and 2,783 feet north of the southwest corner of the township.

**Catahoula Parish**

The Texas Company is drilling sand rock at 2,979 feet on No. 1 Tensas, Section 4-10-6.

**Claiborne Parish**

Dixie Oil Co.'s No. 1 Gilbert, Section 27-21-5, found the top of the Nacatoch at 2,200 feet and is drilling at 2,240 feet. El Dorado Chief Oil Co.'s No. 1 Baker in Section 26-20-7, is drilling shale and boulders at 2,760 feet.

**DeSoto Parish**

Benedum & Trees Oil Co. has begun drilling No. 1 State in Section 22-14-12. Louisiana Public Utilities Co. is drilling at 1,000 feet on No. 1 Rives in Section 14-12-12. R. O. Roy's No. 1 Whitaker, Section 5-13-13, bailed dry at 2,778 feet and is coring.

**East Carroll Parish**

Palmer Corp.'s No. 1 Carroll Land Co. in Section 21-19-11, is shut down for repairs to the rig, total depth (corrected) 2,856 feet; No. 1 Hamley in Section 27-20-11, is sidetracking a fish, total depth 2,923 feet.

**Franklin Parish**

Davis and others' No. 1 Moore, Section 12-11-6, tested dry at 685 feet and is waiting orders.

**Madison Parish**

Ruston Drilling Co.'s No. 1 Sondheimer, Section 24-18-11, is drilling at 2,525 feet.

**Monroe District**

Ouachita Parish—Ouachita Natural Gas Co.'s No. 2-B D'Arbonne, Section 25-19-2e, is drilling at 2,210 feet.

Union Parish—Carter & Wingfield are drilling No. 3-A Clark, Section 7-23-1e, at 800 feet; No. 3 Security Trust, Section 23-23-1e, tested dry at 2,195 feet and is drilling deeper. Woodley Petroleum Co. and Earl Fox have taken over Jones & Mullins' No. 1 McLeod in Section 13-19-1e, and surrounding acreage and drilled 200 feet.

**Sabine Parish**

W. G. Doerne is drilling lime at 4,255 feet on No. 1 Pickering, Section 17-4-11.

**Tensas Parish**

Enochs and others claim to have picked up a sand at 3,520 feet in No. 1 Curry, Section 39-11-12, and are testing.

**EAST TEXAS**

**Shelby County**

Gulf Refining Co.'s No. 1 Pickering in the P. W. Harvey Survey, is drilling in broken gray lime at 3,075 feet.

**ARKANSAS**

**Ashley County**

Atlantic Oil Producing Co.'s No. 1 Moffatt in Section 28-16-8, is drilling sand rock at 3,360 feet after a salt water test at 3,258-61 feet.

**Calhoun County**

Amerada Petroleum Co. had 4 feet of sand in No. 1 Matlock, Section 10-12-13, from 3,280-84 feet but it did not make any sort of show.

**Chicot County**

Sam Hunter's No. 1 Sawyer, Section 19-18-2w, is in black shale at 2,950 feet.

**Logan County**

Arkansas Natural Gas Corp. has a fishing job on No. 1 Parks, Section 26-8-24, total depth 3,203 feet.

**Ouachita County**

McDonald Brothers' No. 1 Wilson in Section 25-15-18, is shut down at 2,703 feet waiting on fuel.

**Union County**

El Dorado—Tharp Drilling Co. has drill stem stuck on No. 1 List, Section 25-17-15, total depth 3,050 feet.

Lisbon—Imperial Oil & Gas Products Co. tested salt water at 2,583 feet on No. 1 Goodwin, Section 26-17-16, and is arranging for a second drill stem test 3 feet deeper.

Lawson—Morefield and Tate's No. 1 Smith, Section 6-18-13, is drilling at 1,950 feet.

Miscellaneous—Garrett-Modisette Drilling Co., drilling for Reid Clark and others, are down 1,803 feet on No. 1 Murphy Land Co. in Section 30-17-17, and have 230 feet of 10-inch cemented for surface string.

## GULF COAST FIELDS

(Continued from Page 51)

fluid showing oil. This well has been shut down since August, but last week the company went back into the hole. The Texas Company's No. 24 Koehler, an old well being deepened, is drilling gumbo at 2,477 feet. The latter company's No. 33 Koehler, also an old well, is drilling shale, sand and boulders at 2,951 feet.

**Boling—Fort Bend and Wharton**

Gulf Production Co.'s No. 2 E. C. Farmer is drilling gumbo and lime at 2,342 feet. Sun Oil Co.'s No. 5 E. C. Farmer is in hard sand at 2,887 feet. Scott & Peck's No. 1 Armstrong, which has been standing the past month at 1,060 feet, is preparing to resume drilling. Heep & Hawn's No. 1 River Bed is standing after setting surface casing at 135 feet.

The above are on the east side of the dome. On the southwest The Texas Company's No. 12-A Taylor is drilling packed sand at 3,167 feet. No. 2-B Taylor is in gumbo and boulders at 1,499 feet.

**Raccoon Bend—Austin County**

Humble Oil & Refining Co.'s No. 2 Urban is drilling hard shale at 1,450 feet. No. 1-B Grawunder is in hard shale and lime at 1,815 feet. No. 1-C Grawunder is standing rigged up. No. 1-B Bracey is drilling sand rock at 678 feet. No. 1 Beal is in hard sand and lime at 726 feet. No. 2 Walton and No. 1 Hardy are rigged up.

**DeWalt—Fort Bend County**

Humble Oil & Refining Co.'s No. 2 Sugarland is drilling deeper in hard shale at 3,660 feet. No. 1 Dew Brothers has set 13⅜-inch surface casing at 1,017 feet. No. 1 Nelson has set 10⅜-inch surface casing at 1,034 feet. A location has been made for No. 4 Sugarland, 500 feet north of the discovery well, No. 1, and a derrick is up.

**SOUTH LOUISIANA**

**Lockport—Calcasieu Parish**

Vacuum Oil Co. and Gulf Refining Co.'s No. 3 Miller tested salt water at 4,454 feet and is pulling screen to deepen. No. 21 Miller also is pulling screen to deepen. No. 4-A Farquahar is drilling ahead at 4,088 feet in a sand with a slight odor of oil. No. 2 Lock-Moore is drilling sandy shale, no showing, at 5,658 feet. Lockport operations the past week have been substantially curtailed with four rigs now idle.

**Jennings—Acadia Parish**

E. F. Simms' No. 1 Ernest Cockrell, west flank deep sand discovery well at 3,845 feet and deepened to 4,327 feet, is waiting on casing cement to set to test a sand and shale showing oil. This operator's No. 2 Syndicate-Clemont, 100 feet east of No. 1 Cockrell, tested salt water at 3,305 feet the past week and now is drilling deeper in sand and shale at 3,355 feet. No. 1 Clemont still is waiting on

ders. No. 1 Jennings is drilling lime and shale at 3,318 feet, and No. 1 Grace Von Schoeler is drilling sand at 2,830 feet. Gulf Production Co.'s No. 2 Leckelt is drilling at 4,030 feet. Cranfill & Reynolds have started drilling in their No. 1 Donelly and are down below 1,254 feet. Abshire-Bolyard Oil Co. has a derrick up for No. 5 fee.

On the east side of the dome, Yount Lee Oil Co.'s No. 4 Housierre-Latrielle is drilling shale at 4,274 feet. The latter's No. 3 Crowley is in gumbo at 1,517 feet.

**Edgerly—Calcasieu Parish**

Rex Petroleum Co.'s No. 1 Louisiana Prairie Narroni is drilling deeper at 3,426 feet. This company's No. 4 Hunter is starting to drill deeper in sidetracked hole around 3,800 feet. Drysdale & Savoy have a location for No. 3 Hill.

**Vinton—Calcasieu Parish**

Gulf Refining Co.'s No. 47 Star Vincent is drilling at 943 feet. Marrs McLean's No. 1 G. & N. G. has set strainer again and is bailing at 1,785 feet. Seiss Oil Syndicate's No. 6 Green also is bailing at 2,475 feet, as is The Texas Company's No. 19 Gray at 1,868 feet, and Vinton Petroleum Co.'s No. 8 Rescue at 2,836 feet. Vinton Petroleum Co.'s No. 2 Gordon is drilling at 2,441 feet.

**Bayou Bouillon—St. Martin Parish**

Rycade Oil Corp.'s No. 3 Atchafalaya has drilled to a total depth of 3,321 feet and is reaming the hole down to set casing. No. 4 Atchafalaya fee is drilling at 2,544 feet. No. 4 Bouillon fee is down 1,080 feet and drilling has been started in No. 5 Bouillon fee which is at 102 feet.

**Hackberry—Cameron Parish**

Louisiana Land & Exploration Co.'s No. 3-B Calcasieu Lake is in sandy shale and boulders at 3,506 feet. Yount Lee Oil Co.'s No. 8 School Land, 2 miles west of production on the old Hackberry Dome, is drilling sand and boulders at 2,493 feet. The latter company has made location for No. 22, 300 feet west of No. 18 Kelso Bayou, East Hackberry, and has a derrick up.

**Sulphur—Calcasieu Parish**

Union Sulphur Co.'s No. 730 fee is drilling sandy shale at 5,527 feet. No. 731 fee is in gumbo at 4,715 feet, No. 733 in lime at 2,840 feet, No. 734 in gumbo at 2,232 feet, No. 735 in gumbo at 1,485 feet and No. 737 in rock at 1,733 feet. No. 736 is rigged up.

**Miscellaneous Fields**

At Markham, Matagorda County, Rycade Oil Corp. and Humble Oil & Refining Co.'s No. 3 Hudson, southwest flank, is drilling sand and lime at 3,936 feet. Hamil and associates' No. 2 Clem, an old hole originally drilled to a total depth of 2,174 feet, was plugged back to a sand showing oil at 1,981-2,120 feet where it tested salt water and was abandoned.

The Texas Company's No. 10 Abrams, West Columbia, Brazoria County, is starting to drill deeper at 3,303 feet. Gulf Production Co.'s No. 11 Moore Orchard, Fort Bend County, is drilling at 3,920 feet. No. 17 Moore is drilling gumbo at 3,170 feet. Fort Bend Oil Co.'s No. 1 Moore at Orchard is drilling gumbo at 1,210 feet.

Yount Lee Oil Co.'s No. 3 Louisiana Petroleum Co., Anse La Butte, St. Martin Parish, is drilling sand at 967 feet. Gulf Refining Co.'s No. 2 Kling, Loreauville, Iberia Parish, tested salt water at 1,225 feet but is being deepened. No. 6-Z State, same dome, is drilling at 1,331 feet. This company's No. 10 United Land Co., Sorrento Dome, Ascension Parish, is waiting on casing cement to set to drill in and test for cap rock production at 1,678 feet. The latter is expected to make a small well. A location already has been made for No. 11 United, 904 feet east and 850 feet north of SW cor., Section 15-10s-4e.

Gulf Refining Co.'s No. 12 Industrial, Starks Dome, Calcasieu Parish, is in oil sand at 3,402-07 feet and has casing cemented for a test. No. 12 Lutcher-Moore, same dome, which tested salt water at 3,367 feet, is to be deepened. No. 11 Lutcher-Moore is drilling below 3,600 feet.

**Miscellaneous Wildcats**

Austin County—Gulf Production Co.'s No. 1 Jackson, Brookshire Dome, is coring sand at 2,980 feet.

Brazoria County—Roxana Petroleum Corp.'s No. 2-A Pool, Allen Dome, is in a gas sand at 5,948 feet and is reaming to set casing. No. 5 Allen, same dome, is drilling sand rock and pyrites at 3,116 feet. No. 3 Reece is standing rigged up. At Stratton Ridge, Bartell and associates have a rig up to work over No. 8 Tolar Dannebaum, a former junked hole at 3,142 feet. Meyers and associates' No. 1 Davidson, Clemens Dome, has been spudded. Moody Corp.'s No. 1 Jamison estate, 3 miles west of Angleton, is drilling gumbo and lime at 4,648 feet.

Chambers County—Pure Oil Co.'s No. 1 Lost Lake, Lost Lake Dome, is drilling hard lime at 3,623 feet. No. 2 Lost River, same dome, is in sand rock at 1,954 feet.

Colorado County—The Texas Company has made location for No. 1 Hogo at Eagle Lake on a block recently leased up. The location is in the Patrick Reels Survey, 2,400 feet northwest and 3,200 feet northeast of the south corner of the survey. Alexander & Smith's No. 1 Kinkler, C. Amsler Survey, near Cat Springs, has drilled to 2,396 feet in sticky shale but has been shut down. Rich Oil Corp.'s No. 1 Brune, 3 miles northeast of Columbus, is drilling shale at 521 feet.

Fort Bend County—Gulf Production Co.'s No. 9 Trone in Long Point Dome, is in a sandy shale showing oil at 3,869 feet. No. 12 Wolf is drilling lime and shale at 597 feet but losing returns. West and associates' No. 1 Hartfield, near Needville, has been spudded in.

Galveston County—Republic Production Co.'s No. 1 Lobit, Dickinson, is drilling hard sand and shale at 1,595 feet.

Harris County—Humble Oil & Refining Co.'s No. 4 Warren, Hockley, is in heaving shale at 4,828 feet and probably will be abandoned. Its No. 1 Minnetex at Mykawa is at a total depth of 3,897 feet but now is reaming the 6⅛-inch hole to 12¼ inches. The latter test will go to 5,000 feet. Baldwin and associates' No. 1 Kitzman, 2 miles north of Cypress, has been shut down temporarily at 2,780 feet for repairs. Cedar Bayou Oil Co.'s No. 1 Johnson, 8 miles north of Goose Creek, is drilling shale at 3,774 feet.

Jackson County—The Texas Company's No. 1 Moore, 16½ miles north of Edna, D.&G.N. Survey, is reaming to the bottom at 2,560 feet. Wright Brothers' No. 1 Lawrence, 12 miles north of Edna, John McHenry Survey, is drilling shale and shell at 3,009 feet. The latter's No. 7-A Drushel is in sticky shale at 3,138 feet. No. 2 Classen is drilling sand at 3,138 feet.

Jefferson County—Gulf Production Co.'s No. 2 Burrell, Fannette Dome, is drilling at 3,287 feet. Deep Test Oil Co.'s No. 1 McFaddin, 4 miles north of Spindletop, at latest reports was drilling gumbo at 2,820 feet. Gaddy Oil Co.'s No. 1 Lanham, Williams Survey, north of Beaumont, was drilling gumbo at 1,384 feet. Oswald Dome Syndicate's No. 3 Oswald, 2 miles south of Cheek, was drilling at 2,412 feet.

Liberty County—Humble Oil & Refining Co.'s No. 3 R. S. Sterling, Moss Bluff Dome, is drilling sandy lime and shale at 2,244 feet. Big Dome Interests' No. 1 Finley, northwest of the town of Hardin, at latest reports was drilling sand at 4,124 feet. The Texas Company's No. 1 Davis, Davis Hill, is drilling shale and boulders at 3,260 feet.

**South Louisiana**

Acadia Parish—Gulf Refining Co.'s No. 1 Housierre-Latrielle, on the Egan Dome prospect, has drilled to below 4,700 feet without finding trace of the dome.

Ascension Parish—Gulf Refining Co.'s No. 10 United Land Co., Sorrento Dome, has 6⅝-inch casing cemented to test cap rock at 1,678 feet. Burnside Oil Co.'s No. 1 Robert, Section 13-10s-3e, is drilling below 400 feet.

Cameron Parish—Roxana Petroleum Corp.'s No. 3 Watkins, Black Bayou district, is coring at 1,392 feet. No. 4 Watkins is drilling shale and lime at 2,459 feet.

Evangeline Parish — Evangeline Oil

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It removes all water, oil, dust, rust, scale and other foreign matter from air passing through pipes and prevents wear and damage caused thereby.

**Free Trial Offer**

Let us send you a Protectomotor on 30 days' free trial. If it does not do all we claim, return it and the trial won't cost you a cent. Write for booklet and full information, or simply mail the coupon.

Staynew Filter Corporation
107 N. Water St., Rochester, N. Y.

STAYNEW FILTER CORP.
107 N. Water St. Rochester, N. Y.

Please send copy of your Booklet on Protectomotor Air Filters.

To use on .....

Name .....

Address .....

Town..... State.....


the pump at 3,457 feet, at which depth it has fluid standing in the hole. Gulf Production Co.'s No. 53 Phoenix is drilling below 4,815 feet. Humble Oil & Refining Co.'s No. 18 Guedry, an old well to be deepened, is fishing liner at 3,170 feet. Republic Production Co.'s No. 6 Dolbear is drilling at 2,570 feet. This company's No. 85 Dolbear is drilling deeper at 2,676 feet after testing salt water at 2,067 feet. The Texas Company's No. 5 Hannah fee is in an oil-showing sand at 3,515 feet and is preparing to test.

**Liberty—Liberty County**

Humble Oil & Refining Co.'s No. 9 Welder, South Dayton side of the dome, is drilling rock at 2,474 feet. Sun Oil Co.'s No. 9 Mitchell is drilling at 1,925 feet. Yount Lee Oil Co.'s No. 11 Mitchell is in gumbo and lime at 2,629 feet.

**Orange—Orange County**

Brownie-Babbette Oil Co.'s No. 2 McLean is in a sand showing oil at 3,609 feet and is bailing for a test. Rycade Oil Corp.'s No. 2-C Cow Bayou has been put on the pump and is making considerable oil and water but no estimates have been made of production. This is a workover in sand at 3,900 feet. Sinclair Oil & Gas Co.'s No. 5 Leon, a former small pumper at 3,615 feet, has gone back to a sand at 3,339 feet and late in the week was washing. Sun Oil Co.'s No. 1 Belile is testing a sand at 3,657 feet.

**High Island—Galveston County**

Gulf Production Co.'s No. 1 Spencer is drilling at 3,067 feet. Marrs McLean's No. 11 Cade is drilling at 3,377 feet. With the completion of Gulf's No. 7 Smith as a small producer these are the only rigs in the field.

**Humble—Harris County**

South Texas Production Co.'s (Cullen and others) No. 2 Morris on the south edge of the field is coring slowly ahead in shale around 4,300 feet. It is showing gas and making occasional heads of Co.'s No. 1 Crowell, Pine Prairie Dome, is drilling lime below 2,646 feet.

Iberia Parish—Louisiana Land & Exploration Co.'s No. 2 Avery's Island, Section 13-13s-5e, is drilling sand and shale at 4,996 feet. This company's No. 3-A Vermillion Bay, at Vermillion Bay, still is rigging up.

Iberville Parish—Roxana Petroleum Corp.'s No. 2 Wilbert, White Castle Dome, is bailing salt and sulphur water with a showing of oil from cap rock at 4,218 feet. Standard Oil Co.'s No. 1 Wilbert, Bayou Blue Dome, is drilling at 3,500 feet.

LaFourche Parish—Gulf Refining Co.'s No. 7 Stark is drilling sticky shale below 900 feet.

St. Martin Parish—Ohio Oil Co.'s No. 3 Martin, Hager Dome, is drilling at 3,451 feet.

St. Tammany Parish—West Pearl Oil Co.'s No. 1 Fritsche has resumed drilling after a two months shutdown and is in gumbo at 1,163 feet.

## OKLAHOMA FIELDS

(Continued from Page 44)

| | | | |
|---|---|---|---|
| Walker | 2- 9-5 | 3 | 2,949 |
| Texas: | | | |
| Anderson | 2- 9-5 | 8 | 415 |
| Brown | 10- 9-5 | 8 | 470 |
| James | 6- 9-6 | 1 | 605 |
| Rogers | 5- 9-5 | 4 | 2,440 |
| Wilmott | 10- 9-5 | 7 | 725 |
| Tidal: | | | |
| Walker | 35-10-5 | 1 | 1,995 |
| Watkins | 9- 9-5 | 7 | 2,845 |
| Twin States: | | | |
| Barker | 12- 9-5 | 3 | 39 |
| Hern | 2- 9-5 | 4 | 295 |
| Total | | 282 | 78,713 |

**Seminole Pool**

| | | | |
|---|---|---|---|
| Amerada: | | | |
| Fixico | 23- 9-6 | 4 | 452 |
| Killingsworth | 23- 9-6 | 4 | 440 |
| Rentie | 23- 9-6 | 3 | 424 |
| Atlantic: | | | |
| Cudjo, N. | 35- 9-6 | 3 | 465 |
| Barnsdall: | | | |
| Carter | 24- 9-6 | 7 | 419 |
| Henry | 14- 9-6 | 2 | 484 |
| Jones | 34- 9-6 | 4 | 990 |
| Carter Oil: | | | |
| B. Carter | 24- 9-6 | 2 | 165 |
| F. Carter | 23- 9-6 | 3 | 128 |
| Creamer | 34- 9-6 | 2 | 10 |
| Cudjo, R. | 35- 9-6 | 4 | 260 |
| Cudjo, W. | 34- 9-6 | 1 | 30 |
| Gilliland | 27- 9-6 | 1 | 225 |
| Grisso | 23- 9-6 | 4 | 425 |
| Grisso, M. | 15- 9-6 | 1 | 160 |
| Killings, G. F. | 14- 9-6 | 4 | 70 |
| Killings, M. E. | 23- 9-6 | 12 | 4,145 |
| Knapp | 13- 9-6 | 3 | 40 |
| Lukes | 27- 9-6 | 5 | 1,030 |
| Pounder | 24- 9-6 | 2 | 125 |
| Simpson | 35- 9-6 | 2 | 200 |
| Strothers | 34- 9-6 | 4 | 373 |
| Vierson | 23- 9-6 | 2 | 120 |
| Empire: | | | |
| Gross | 25- 9-6 | 2 | 27 |
| Wilson | 34- 9-6 | 2 | 296 |
| Gypsy: | | | |
| Butler | 35- 9-6 | 4 | 737 |
| Carter | 24- 9-6 | 8 | 614 |
| Cudjo | 34- 9-6 | 4 | 215 |
| Fixico | 26- 9-6 | 7 | 165 |
| Harjo | 25- 9-6 | 3 | 540 |
| Wolfe | 26- 9-6 | 6 | 335 |
| Independent: | | | |
| Fixico, P. | 23- 9-6 | 3 | 490 |
| Harjo | 25- 9-6 | 2 | 120 |
| Butler | 35- 9-6 | 3 | 1,020 |
| Fixico, T. | 26- 9-6 | 6 | 511 |
| Jones | 26- 9-6 | 4 | 172 |
| I. T. I. O. | | | |
| Allen | 25- 9-6 | 2 | 120 |
| Bowlegs | 26- 9-6 | 12 | 2,070 |
| Goodin | 23- 9-6 | 4 | 396 |
| Harjo | 23- 9-6 | 3 | 51 |
| James | 24- 9-6 | 2 | 180 |
| Reed | 24- 9-6 | 1 | 10 |
| Kingwood: | | | |
| Johnson | 22- 9-6 | 3 | 765 |
| Magnolia: | | | |
| Boren | 2- 8-6 | 1 | 4 |
| Franks | 25- 9-6 | 4 | 720 |
| Mid-Continent: | | | |
| Rentie | 14- 9-6 | 9 | 455 |
| Tayeche | 24- 9-6 | 7 | 210 |
| Phillips: | | | |
| Strothers | 27- 9-6 | 2 | 90 |
| Prairie: | | | |
| Gross | 25- 9-6 | 5 | 70 |
| Mason | 36- 9-6 | 1 | 60 |
| Spencer | 13- 9-6 | 1 | 10 |
| Strothers | 27- 9-6 | 8 | 2,490 |
| Pure Oil: | | | |
| Strothers | 26- 9-6 | 17 | 5,180 |
| B. Strothers | 36- 9-6 | 5 | 825 |
| C. Strothers | 34- 9-6 | 1 | 372 |
| Roxana: | | | |
| Harber | 22- 9-6 | 2 | 234 |
| Lasley | 22- 9-6 | 2 | 29 |
| Sinclair: | | | |
| Carter | 13- 9-6 | 2 | 25 |
| Cudjo "A" | 35- 9-6 | 6 | 1,168 |
| Cudjo "B" | 35- 9-6 | 4 | 792 |
| Dicey | 22- 9-6 | 2 | 165 |
| Fixico | 23- 9-6 | 4 | 900 |
| Slick: | | | |
| Cudjo | 35- 9-6 | 3 | 796 |
| Franks | 35- 9-6 | 6 | 1,501 |
| Giblet | 35- 9-6 | 3 | 1,480 |
| Tiger | 1- 8-6 | 1 | 50 |
| Superior: | | | |
| Cudjo | 35- 9-6 | 4 | 210 |
| Texas: | | | |
| Mayhue | 14- 9-6 | 1 | 270 |
| Strothers | 2- 9-6 | 1 | 125 |
| Tidal: | | | |
| Carter | 24- 9-6 | 4 | 485 |
| Fixico | 26- 9-6 | 6 | 1,350 |
| Harjo | 25- 9-6 | 3 | 290 |
| Tidal: | | | |
| Harjo, T. | 23- 9-6 | 5 | 125 |
| Turman: | | | |
| Cudjo | 35- 9-6 | 4 | 560 |
| Grisso | 35- 9-6 | 1 | 110 |
| Jones | 34- 9-6 | 4 | 1,360 |
| Total | | 287 | 42,370 |

**Searight Pool**

| | | | |
|---|---|---|---|
| Amerada: | | | |
| Johnson | 4- 9-6 | 1 | 45 |
| Strothers | 3- 9-6 | 2 | 1,090 |
| Barnsdall: | | | |
| Jackson | 5- 9-6 | 1 | 30 |
| Carter: | | | |
| Davis | 4- 9-6 | 6 | 515 |
| Frazier | 3- 9-6 | 6 | 3,225 |
| Johnson | 3- 9-6 | 1 | 15 |
| Kiker | 2- 9-6 | 1 | 25 |
| Mandler | 3- 9-6 | 2 | 10 |
| Scott | 26-10-6 | 1 | 15 |
| Gypsy: | | | |
| Cudjo | 4- 9-6 | 3 | 740 |
| Mid-Continent: | | | |
| Grayson | 34-10-6 | 6 | 67 |
| Saloche | 33-10-6 | 5 | 735 |
| Nevins | 32-10-6 | 1 | 900 |
| Pine: | | | |
| Lula | 4- 9-6 | 1 | 25 |
| Prairie: | | | |
| Cannon | 33-10-6 | 1 | 5 |
| J. Carter | 10- 9-6 | 1 | 5 |
| Houch | 33-10-6 | 1 | 5 |
| Kincaid | 33-10-6 | 2 | 60 |
| Wimer | 22-10-6 | 1 | 10 |
| Pure: | | | |
| Aldridge | 3- 9-6 | 4 | 1,020 |
| Roxana: | | | |
| Strothers | 3- 9-6 | 4 | 210 |
| Sinclair: | | | |
| Polly | 3- 9-6 | 4 | 1,310 |
| Superior: | | | |
| Varnum | 4- 9-6 | 1 | 60 |
| Texas: | | | |
| Fleet | 4- 9-6 | 1 | 10 |
| Twin States: | | | |
| Varnum | 4- 9-6 | 2 | 20 |
| Wilcox: | | | |
| Chupco | 4- 9-6 | 8 | 1,335 |
| Total | | 67 | 11,530 |

**Totals**

| Field— | Wells | Prod. |
|---|---|---|
| Little River | 292 | 127,200 |
| Maud | 2 | 1,100 |
| Mission | 11 | 1,000 |
| Bowlegs | 311 | 51,450 |
| Earlsboro | 282 | 78,713 |
| Seminole | 287 | 42,370 |
| Searight | 67 | 11,530 |
| Grand total | 1,252 | 312,363 |

**Creek County**

Twin State Oil Co. is repairing the ri to deepen No. 1 Barnett, NW cor. N NW, Section 15-15-8. Magnolia Petro leum Co. and F. R. Billingslea made l cation for No. 2 Wattie, NE cor. Se tion 6-15-7. Magnolia Petroluem Co. repairing the rig to deepen No. 9 Lew SW cor. Section 27-17-7. Pine & Smi moved the rig to the location for No. 1 H. Tiger, SW cor. SE, Section 17-17 Drumright area. Sand Springs Home l the rig up for No. 28 T. Atkins, CW NW NW, Section 4-18-7. C. G. Tibbe

has built the rig for No. 2 Unallotted, CEL NE NW, Section 9-14-10. Wilson Petroleum Co. moved the rig out for No. 1 Cat, SE cor. SW, Section 31-16-9. Collins and others' No. 1 Sapulpa, SE cor. NE SE, Section 3-17-11, is spudding.

Houston Oil Co. and Silurian Oil Co. and others' No. 1 Clifford NE cor. NW, Section 7-19-7, made 525 bbls. from sand at 3,141-49 feet. Riverland Oil Co. and others' No. 1 Simopoke, SE cor. NE SE, Section 9-16-12, is dry and abandoned at 2,150 feet in Dutcher sand. Shaffer Oil & Refining Co. and others' No. 1-A Page, SE cor. SW NW, Section 35-16-10, is dry and abandoned in Wilcox sand at 3,084-3,099 feet. O. M. Irelan's No. 2 Smith, C NW SE, Section 11-17-10, was completed for 15 bbls. in Red Fork sand at 2,026-80 feet. Haddock and others' No. 1 Evans, NE cor. SE SW, Section 16-17-9, is dry and abandoned at 3,368 feet in Wilcox sand. Gled Oil Co.'s No. 2 Murrell, NW cor. SW NW, Section 17-19-9, drilled to 2,485 feet and plugged back to Skinner sand at 2,173-2,205 feet where it was completed for 1,000,000 feet of gas.

**Kay County**

Ingram & Wilson's No. 1 Myer, C SE NW, Section 14-27-1, is a machine on the ground for a shallow gas test. No. 2 Johnson, CNL S half NE, Section 36-28-1w, was completed for 7,200,000 feet of gas in sand at 722-28 feet. No. 1 Booley, NW cor. SE SW SW, Section 14-27-1, was completed for 100,000 feet of gas in sand at 848-50 feet.

**Osage County**

Minnehoma Oil Co. made location for No. 3, NW cor. SE, Section 11-26-8. Phillips Petroleum Co. is moving the rig in for No. 1, SW cor. NW NE, Section 33-25-6. The Texas Company is building a rig for No. 1, NW cor. SE, Section 22-24-7. Winona Oil Co.'s No. 25, SE cor. NE SE, Section 28-24-10, is drilling at 225 feet.

Clint Moore estate and Ohio Osage Oil Co.'s No. 15, NW cor. SW SW, Section 9-21-9, was completed for 20 bbls. in sand at 292-314 feet. Phillips Petroleum Co.'s No. 10, NW cor. SW SE, Section 17-27-6, made a 50-bbl. well in Burbank sand at 2,906-70 feet. Clint Moore estate and Ohio Osage Oil Co.'s No. 3, NW cor. Section 16-21-9, was completed for 20 bbls. in sand at 223-55 feet. Oklahoma Natural Gas Corp.'s No. 1,654 is dry and abandoned in Burgess sand at 1,870-1,916 feet.

**Okfuskee County**

F. D. Misener and others' No. 1 Bird, NW cor. NE, Section 21-10-11, is a machine. Atlantic Oil Producing Co. moved a machine to the location for No. 2 Robinson, CWL NW SW, Section 12-10-11. W. L. Umbrum has the rig up for No. 2 Sullivan, SW cor. SE SE, Section 1-10-11.

W. L. Umbrum's No. 4 Simmer, SE cor. NE NE, SE, Section 11-10-11, was completed for 60 bbls. in Booch sand at 2,010-27 feet. No. 1 Johnson, SE cor. SW SE, Section 2-10-11, made 30 bbls. in Salt sand at 1,631-51 feet after it was plugged back from Lyons-Quinn sand at 2,990 feet. Henry Oil Co.'s No. 2 Searns, SW cor. NE, Section 5-11-11, is dry and abandoned in Wilcox sand at 3,864-70 feet.

**Muskogee County**

Grubbs & Young moved a machine out for No. 4 Friday, NW cor. SW NW, Section 8-15-15. C. F. Davis and others' machine is on the location for No. 1 Morris, NE cor. NW SW, Section 20-15-15. Lockwood and others' machine is on the location for No. 1 Lewis, SE cor. Section 31-14-16. Bement Oil Co. has the machine on the location for No. 4 Flowers, CWL SW NE, Section 5-13-16. J. R. Graves and others' No. 5 Flowers, C SE NW, Section 5-13-16, is a rig on the ground.

Grubbs & Young's No. 3 Friday, CWL SW NW, Section 8-15-15, was completed for 6,000,000 feet of gas in sand at 1,137-49 feet. Gledden Oil Co.'s No. 1-A Mathews, SE cor. NW NE, Section 19-15-15, is dry and abandoned at 1,832 feet.

**Okmulgee County**

L. H. Wentz and others' No. 1 Denen, NE cor. SW NE, Section 14-14-12, is spudding. Devonian Oil Co. and others' No. 1-A Chamberlain, SW cor. SE, Section 35-15-12, is drilling at 1,567 feet. J. A. Swindler has a machine at the location for No. 10 Lewis, CNL NE SE, Section 20-15-14. Tidal Oil Co.'s No. 10 Mathews, SW cor. SE, Section 24-15-14, is rigging.

Harsha & Delaney's No. 1 Unallotted, SW cor. NW, Section 35-16-14, is dry and abandoned at 1,923 feet in Burgess sand. F. D. Misener's No. 11 Francis, NW cor. SW NW, Section 11-15-14, is dry and abandoned at 1,760 feet. H. L. Jolly and others' No. 1 Serrell, SE cor. SW, Section 33-15-14, was completed for 8 bbls. in sand at 1,658-70 feet. J. L. Selby's No. 10 Connor, C NW NW, Section 6-14-15, is dry and abandoned at 1,650 feet. F. D. Misener's No. 5 Tucker, SE cor. SW NW, Section 11-13-14, has been abandoned at 1,310 feet. W. B. Pine's No. 1 Henry, SE cor. NE NE, Section 30-12-13, made 20 bbls. from sand at 2,121-43 feet.

**Oklahoma County**

Indian Territory Illuminating Oil Co. is building the rig for No. 1 Community, C NE SW, Section 13-11-3w, for a gas well.

**Wagoner County**

C. W. Gillett's No. 6 McIntosh, NW cor. SE, Section 25-17-16, is drilling at 100 feet. Peterson & Young's No. 1 Mitchell, CWL NW SE, Section 23-16-16, is spudding. W. R. Rowland's No. 1-A Sugar, NW cor. SW, Section 17-17-16, is a dry hole at 1,112 feet. H. W. Kiskaddon's No. 2 Howard, NE cor. SE NE, Section 8-15-16, is dry and abandoned at 1,396 feet.

**Tulsa County**

Roxaline Petroleum Co.'s No. 1-A Hutching, SW cor. Section 27-17-12, is a machine. Ellen Oil & Gas Co.'s No. 1-A Nave, NE cor. SW, Section 25-18-14, is dry and abandoned at 1,341 feet.

**Beckham County**

Carson and others made location for No. 1 Denby, SW cor. SE NE, Section 20-8-22w.

**Carter County**

Magnolia Petroleum Co.'s No. 3 Pollock, NE cor. SE SE, Section 14-1s-3w, is a rig under construction. The rig is being built for No. 3 Cohens, SE cor. SW, Section 33-1s-3w. C. Anderson and others' No. 1 Eaves, SW cor. NW SW, Section 24-1s-3w, has been completed for 135 bbls. in sands at 2,386-2,675 feet. Magnolia Petroleum Co.'s No. 6 Bumpass, NW cor. SE, Section 33-1s-3w, is dry and abandoned at 5,115 feet.

**Cotton County**

Cullum & Perkins' No. 4 Priddy, NE cor. SE SE NE, Section 3-2s-10w, is pumping 30 bbls. from sand at 2,172-86 feet.

**Garvin County**

Magnolia Petroleum Co.'s No. 11 Jones, NE cor. SE NW, Section 14-1-3w, is making 34 bbls. from sands at 1,524-32 and 1,548-52 feet.

**Grady County**

Magnolia Petroleum Co. made location for No. 8 Smith, NW cor. SE NE, Section 35-5-8w. Stogner and others' No. 11 McCaughtry, SW cor. NE, Section 23-5-8w, was completed for 18,000,000 feet of gas at 2,290 feet. Little Nick Oil Co.'s No. 4 Farwell, SE cor. Section 26-5-8w, set pipe at 2,114 feet, drilled to 2,398 feet and was completed for 30,000,000 feet of gas. Commerce Development Co.'s No. 3 Parks, SW cor. Section 13-4-8w, gauged 25,000,000 feet of gas at 2,360 feet. Farley and others' No. 1 McMahon, C NE NW, Section 24-4-8w, has been abandoned at 2,575 feet. Carter Oil Co.'s No. 4 E. Polson, NW cor. SE SW, Section 27-3-5w, was completed for 22 bbls. in sand at 1,651-78 feet.

**Kiowa County**

Allen Brothers' No. 1 Howell, NW cor. SE, Section 13-1-17w, is spudding. Alexander and others' No. 2 Fuqua, CNL NE NE, Section 18-6-16w, has been abandoned at 502 feet.

**Stephens County**

Snodgrass Oil Co.'s No. 1 Malernee, SW cor. NE NW, Section 34-1s-8w, is drilling at 1,650 feet. Petroleum Producers Corp.'s No. 1-A Leonard, SW cor. NE NE, Section 6-1s-8w, has been abandoned at 2,559 feet. Pearce & Brown's No. 1 Winter, NW cor. SE, Section 10-1s-8w, is dry and abandoned at 2,513 feet.


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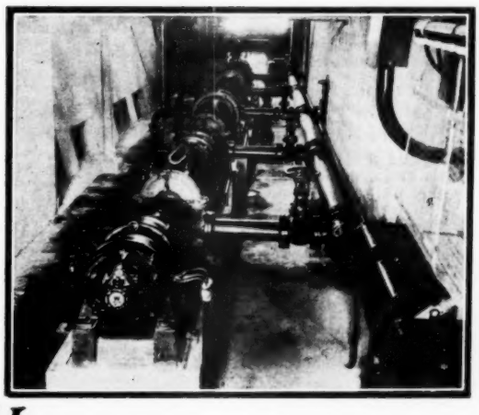

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Nearly complete string heavy drilling tools and fishing tools to drill from 20-inch down to 6-inch hole. (Spang and National, all A.P.I. Standard joints). All new only used to drill one well, nearly new 5,000 ft. sand line and drilling lines and 1,200 ft. 1¼-inch casing line; 3,000 feet 32-pound seamless casing, 8¼ inch; 1,100 feet 45-pound casing, 12½ inch; many other tools and accessories all dismantled, greased and painted on platform near Bartow, Florida. Ready for shipment; complete invoice and particulars upon request. I. A. Yarnell, Lake Wales, Florida, or C. F. Palmer, McKean Trust Company Bldg., Bradford, Pa.

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To Manage Throughout.

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Compensation required, $500 per month straight or $400 plus small interest in net income after all expenses, taxes. Box C-620, The Oil and Gas Journal, Tulsa, Okla.

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AUDITOR WANTED, must have refinery accounting experience, particularly where "cracking" units are operated. Must be willing to travel. Apply, stating age, education, experience, salary expected and references. Box C-624, The Oil and Gas Journal, Tulsa, Okla.

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ENGINEER WANTED to run twelve hour shift, air compressor station, using Miller Machines. Write experience, giving references. W. D. Chew, Shreveport, La.

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WANTED—Young man with at least High School education and experience in Refinery Purchasing Dept. Location Chicago. Box C-634, The Oil and Gas Journal, Tulsa, Okla.

**35 CENTS** a line first insertion; 25c a line each additional insertion. Cash in advance.

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Established 1922
We are in the market at all times handling Texas Producing Oil Royalties. All transactions handled on cash basis. Send us your Buying and Selling Orders.
AMERICAN NATIONAL BROKERAGE CO.,
E. T. Marion, Manager
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Dallas, Texas.

UNDEVELOPED OKLAHOMA ROYALTIES, favorable districts. Joe P. Crawford, Petroleum Bldg., Oklahoma City, Okla.

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In southern Oklahoma, on major company structure, in line for big production; subsurface and geophysical. Under lease to drill within 40 days. Fractional royalty on 40 to 160 acres on $30 base; best part of structure; for further information write,

F. O. HARRELL

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WRITE tor our list; oil leases, royalties and blocks; Pontotoc, Seminole and adjoining counties. Bowles & Smith, Ada, Okla.

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Perpetual Royalties.
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LEA COUNTY, NEW MEXICO, lease, 40 acres section 33, township 17, range 36. James R. Haynes, Grantville, Kansas.

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Leases and Royalties.
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FOR LEASE—880 acres. 10 year contract 50 cents rental. Township 11 South, Range 37 East, Lea County, New Mexico. Well going down within four miles. Will sell ½ of ⅛ royalty on 1,000 acres, or more. Address, J. R. Webb, Portales, New Mexico.

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WOOD AND WOODARD COUNTIES
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NEW MEXICO oil leases; Lea, Eddy, Chaves, Union, Quay and all other active counties; complete list and map on request. Orcutt-Harris & Co., Colcord Bldg., Oklahoma City, Okla.

NEW MEXICO — Lease in Lea and Roosevelt; cheap royalties in Roosevelt and Guadalupe; leases in any county; information regarding New Mexico developments. William U. Tate, Franciscan Hotel, Albuquerque, N. Mex.

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$3 TO $5 per acre for West Texas land with Oil and Mineral rights 40 acres up. New Mexico oil leases. Winter garden lots and truck farms on easy terms; agents wanted. A. Poe, 829 Wilson Bldg., Dallas, Texas.

FOR LEASE—520 A. Extension of a pool, Bartlesville sand, 1,120 ft. fully tested. J. S. McQuiston, Independence, Kansas.

FOR SALE—70 acres of land within 3 miles of developed oil field in Hancock County, Ky. Can lease 1,000 acres adjoining this land. Box C-633, The Oil and Gas Journal, Tulsa, Okla.

LEASES—PERMITS—UNUSUALLY CHEAP
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## Old Timers

Sprinkled throughout these Classified Wants pages are the advertisements of many companies and individuals who have been using The Oil and Gas Journal for dealing in leases, royalties and production, for buying and selling used equipment, hiring competent help and making business deals of all kinds for ten, fifteen years and more. Obviously they have obtained good results or they would have discontinued long ago.

The Oil and Gas Journal Classified Wants can serve you equally well.

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PRODUCING • REFINING • MARKETING
*Classified Wants Department*

### LEASES—PRODUCTION

FOR SALE—Oil and Gas Permit. 4 Sections in T. 16 R. 27, Eddy, N. Mex., H. C. Petty Collectors Office Court House, Kansas City, Mo. Box C-635, The Oil and Gas Journal, Tulsa, Okla.

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DO YO UNEED MONEY for organizing or financing oil or mining deals? Write 136 E. 13th, Oklahoma City, Okla.

BULLETIN, containing information of priceless value to responsible parties seeking capital, yours upon request. Free analysis and advice cheerfully given. Moderate rates. Prompt service. Morris, Financing Specialist, 3608 Warren St., Philadelphia, Penna.

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WANTED TO KNOW the whereabouts of Mr. H. M. (Captain) Anderson, formerly superintendent for The Texas Company about 1920 and 1921. He will learn something of interest to him by communicating with Box C-613, The Oil and Gas Journal, Tulsa, Okla.

WANTED—Good lines to sell the Oil Supply, Hardware jobbers and Plumbers Supplies Companies in the South and Southwest by a well acquainted, aggressive Salesman who has been traveling the territory mentioned for the past fifteen years. Box 631, The Oil and Gas Journal, Tulsa, Okla.

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### RANCHES AND FARM LANDS

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### GEOLOGISTS

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Magnetometer surveys made, contour map prepared. Expenses and acreage. GEOPHYSICAL EXPLORATION CO., Petroleum Bldg., Oklahoma City, Okla.

OIL LOCATED before drilling. Geophysical method. Magvibrometer Instrument; take pay in oil. No oil, no pay. Except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Texas.

AT LAST scientific method perfected for locating Oil. Positive action. Will make few free locations. Know of two big undeveloped structures spudder would handle. ADDRESS, Box 801, Cisco, Tex.

# Fair Business in the Chicago Market

## Buyers Shopping Around for Best Price. Better Demand for Higher Tests. Steady Movement of Distillates

By J. B. Waldo

CHICAGO, Oct. 29.—There was a fair business doing in this market on Monday although there was no rush for any special product. Buyers were in the market for their needs but bought carefully, most of them shopping round for the best price they could get. The demand for U. S. Motor gasoline was quite good and there was a little better demand for the higher tests according to some sellers. Some of the larger refiners reduced their prices a quarter of a cent making their price for U. S. Motor gasoline 9½ cents. The decline was not general with these refiners but some expected to follow a little later although one or two stated they were instructed from headquarters to hold their prices at the former figure. Several refiners are quoting the trade direct at 9¼ cents for their U. S. Motor grade. Some of these are in Oklahoma and others in North Texas. None are large plants although they have a good product. Tank car marketers were quoting 9¼ to 9⅜ cents and salesmen stated that it was hard to sell spot buyers at more than 9¼ cents. The movement on contracts is steady and instructions are being given promptly. Weather was good over the week-end being clear but cool with frosts on Sunday night.

Although the larger distributors of furnace oils are well stocked ahead and will not need to order for several weeks unless there is a period of cold weather there is a steady movement and all sellers agree that distillates are outselling gas oils so far this season. The distillate market was firm.

Kerosene moved slowly on Monday and while prices were rather firm there was a wide range the 41-43 grade being priced from 5⅝ to 6⅛ cents with the spot market ruling at 5½ to 5⅞ cents. There was no special activity in gas or fuel oils on Monday just a routine business, buyers placing their usual orders for their November requirements. Business was hard to close. Some of the refinery quotations made direct to consumers were below the average of the market. Sellers are trying to secure better prices but state that under such conditions it is a hard thing to do even on the low sulphur oils while the fuels high in sulphur were barely holding their own. A larger movement from the refineries is expected with the first of the month shipments on contracts but the spot demand for all products will hardly show any real change during the coming week.

### Rumor of Reduction

Business was not so active in this city last week, that the local oil men did not have time to discuss the situation freely and fully among themselves. One of the quiet "tips," was that the spot price held by the leading refiners for U. S. Motor gasoline would be reduced to 9½ cents on or very shortly before November 1. There were some denials of this report but it was given considerable belief by many. It was thought to indicate either one of two conditions, perhaps both. These were that the larger refiners had caught up with their orders and were in position to accept spot business with the condition that shipments be made at once or that they did not like to see so much business going to those refiners who were seeking it actively. For one thing the smaller refiners and the marketers were doing a nice business which they could not have done, at least to the same extent if the refiners had competed for the business.

The representative of one of the larger refiners told the following experience: Two of his good spot customers who regularly bought and preferred his gasoline asked for prices early in the month. The quantity they wanted to buy was material, in one case 20 cars and in the other 15 cars. On being quoted the regular price of 9¾ cents they replied they could not pay this price as they were offered good material for less. Shortly after the middle of the month, one of these buyers asked for a price on 10 cars and was again quoted 9¾ cents. He replied that he had 6 quotations ranging from 9¼ to 9⅜ cents, that the offers were from responsible refiners and marketers and gave a list of the names of the bidders for his business and the prices offered, but said he would pay his original source of supply 9½ cents. The local sales manager could do nothing but refuse the business as he was held to the regular price of 9¾ cents.

Undoubtedly this case is typical of many others for the sellers who are not bound to sell at the higher price have been much pleased at the high quotations made and sent out in various ways by the larger refiners as it has thrown a lot of business their way and they have only hoped it would continue indefinitely. Some of this gasoline has come from Oklahoma and Kansas, some from North Texas and some from West Texas refiners. The sales manager of one of the latter plants said that so far as quality of product was concerned, they challenged comparison with the product of any other refiner and as a proof of his assertion named some concerns to whom they sold regularly. The list included one integrated oil company with a Group 3 refinery and some large and careful buyers in various states, one of these being in Ohio. He claimed much of the talk against West Texas gasoline was propaganda based on the product of some plants or occasional shipments from others. He remarked that at one time he bought for a certain large company and among the list of refiners whose product was tabood by his superiors were plants in Oklahoma and North Texas showing that some gasoline not fully up to specifications had come from these states as well as from West Texas.

### West Texas Experiments

What may be expected in the long run is to be gathered from the experiments of one large Group 3 refiner with West Texas crude. A series of experiments were started with this crude. The first results were disappointing, the product being off color, sour and the yield small. But by persevering they found a way to refine the crude and produce a product that was not to be distinguished from the gasoline refined by themselves from Oklahoma high grade crude and with a very satisfactory yield as to quantity. What this concern can do others will find a way of accomplishing and the output of satisfactory gasoline from the West Texas plants may play a steadily increasing part with the industry in this section. Undoubtedly the intrusion of this gasoline has been important this season. Before the next gasoline season there will be more refineries offering their product. Some at least will be large plants and specially equipped to handle the peculiar crude on which they will depend for material so they will have to be reckoned with.

### Stocks Low

As a general rule distributers have allowed their gasoline stocks to run down to the lowest level at which they can operate with safety and at a profit. Those who are not provided with a contract connection are buying quite freely in the spot market. They are ordering from hand to mouth but as the consumption is very good for the season as a whole the spot demand has been quite active as to total sales although very changeable from day to day. Some days last week the spot market was quite active and on others very quiet. The same was true of the various sellers, one would be busy one day and another would be doing business another. The contract requirements are of course much less for October than for August just as they will be a little less than for November. According to the managers of local offices, there are no stocks of gasoline of any size but all state they are in position to make prompt shipments. One leading integrated company states that it is still drawing on stocks and expect to still further reduce inventories before the end of the year. This plan is a great contribution to the stability of prices. The statement is also made by refiners and some large companies who distribute their own product that they do not plan to accumulate any large supplies of gasoline in advance of next season's actual consumption.

### Prices Uneven

The price situation was very uneven all of last week with the larger refiners quoting 9¾ cents for the U. S. Motor grade and others selling at lower prices. The consensus of opinion among the active sellers was that the bulk of the movement of this grade on spot orders was 9¼ to 9⅜ cents, some saying that the former price was most freely quoted. Lower prices than these were named occasionally and some business was lost on quotations of 9¼ cents and for several orders in which there was competitive bidding prices of 9⅛ cents were named and in one case at least that price did not secure the business. An investigation made by one concern convinced them that there was considerable selling by dealers to other dealers as by so doing the original buyer could secure a larger discount and would split the profit with the others. One case was uncovered where a concern buying in tank car lots was supplying a local cab company on the basis of actual costs plus one-fourth of a cent for handling and profit.

The export business rather improved the situation as to the higher tests although the domestic demand is still light. Many dealers will undoubtedly soon begin to sell more of the higher gravities as motorists shift to them with colder weather but the sales of these grades are being reduced by the antiknock gasolines. Several of the refiners who make exclusive contracts with distributers and also have their own distribution change to a 60-62 400 end point material November 1 or what is practically that grade in their antiknock gasoline. The natural gasoline has been fairly active and a little stronger in tone with local prices higher for the C and B grades.

### New Contract Form

Refiners are signing up dealers on the new 3½ cent contract form which provides for a reduction in the guarantee whenever the total of the cost of the delivered gasoline freight paid plus the guarantee is in excess of the normal tank wagon price at the point of delivery. No local protection is given in these contracts. They are also for an indefinite period as they provide that after the term originally agreed upon, usually for one year, they are to continue indefinitely subject to cancellation by either party on due notice. If the total of the spot market price, plus freight and guarantee, is less than the tank wagon price at destination, there is no division of the extra profits as in the first draft of these forms of contract but the buyer enjoys the full benefit of the lower cost. The spot market price is commonly based on the published quotations of one or several market reports although some of the contracts simply state the price is to be that of the spot market as determined by the refiner. The larger refiners admit some customers have not liked these new contracts at first but say that they are gradually seeing they are fair and reasonable and signing them. This seems to have been the case with the new Q. D. A., contracts as they are being pretty generally signed at least so the sales force claims.

### Kerosene Stronger

The kerosene market has been given a little strength by the sales made by refiners to exporters. The price named seems to have been low but the statement is made that the grade purchased by at least one of the large buyers was not water white but prime white kerosene. The domestic demand is light and while prices are quoted as fractionally higher offers are freely made and there is no permanent improvement seen in the outlook. The domestic business is entirely routine with sales confined for the greatest part to occasional cars and refiners who are holding for 6¼ cents are getting their share as the kerosene goes with the gasoline order for the most part.

### Furnace Oils Quiet

Furnace oils have been quiet in all grades from distillates down to the lighter fuel oils. The distributers are well supplied and the continued mild weather has prevented any important draft on their tanks. They have had no occasion to order additional supplies in any quantity but the anticipation based on the increase in the number of consumers of these oils is that the first real cold spell that continues for more than a day will bring in a steady demand. Judging from statements made by leading refiners regarding their stocks of desirable furnace oils there is no large supply in sight of these fuels. Three sources of supply for distillates report the quantity which they will have for trade in this territory is so small that they simply notified their regular trade to make their wants known and these customers absorbed all the distillate alloted to this section. Desirable gas oils are also in the same category and the high gravity, low sulphur fuel oils have been rather scarce right along. In all grades distillates, gas oils and fuel oils the light colors are not in ample supply and command some premium. Prices of furnace oils are firmly held with some refiners asking prices for November shipment above those quoted for spot.

Gas companies are buying steadily in the usual routine way. Some U.G.I. material is still available at 2⅝ cents but the quantity is limited at that price and one of the leading sources of supply in this territory is now quoting 2⅝ cents spot and 2½ cents for November and as this seller is believed by other dealers to have held the market down to 2⅝ cents by free selling at this price a firm market at 2½ cents is looked for on this material. The demand for dark industrial gas oil is just fair but prices are steady. For the better grads with a flash, color and odor that makes them desirable as furnace oil the market is firm and should strengthen. There is considerable gas oil to be had that is not strictly up to either U.G.I. specifications and which quite commonly is rather strong in the odor which can be had at 2¼ cents Group 3

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# Export Buying Helps Eastern Market

## Continued Good Domestic Demand for Gasoline Maintains Better Tone. Refiners Still Holding at 11¾ Cents

By Special Correspondent

NEW YORK, Oct. 29.— Heavier export buying, coupled with a continued good domestic demand, has made for a better tone in the East Coast gasoline market this week. Kerosene movement was good, with markets well maintained. Wax prices moved into firmer ground with heavier buying evidenced. Lubs were soft, with bright stock again lower. Fuel, gas and Diesel oils remained in steady position.

Refiners have been getting a good demand for U. S. Motor gasoline during the week, with 11¼ cents still prevailing at Bayonne, in tank car lots. Jobbers are ordering forward stocks in fair volume, but are not anticipating requirements to any great extent. This is resulting in a good volume of day-to-day business.

Increased export buying during the week, putting prices up on Navy and 64-66 naphtha at the Gulf, has brought about a generally better feeling in the market. Large quantities of high gravity gasoline have moved into export channels this week, and additional inquiries from the Continent have developed that East Coast refiners are well booked up for the next 30 to 45 days in many instances, indicating a most healthy condition for this season.

### Tank Car Gasoline

Refiners are all holding at 11¼ cents, this price applying to California U. S. Motor as well as Atlantic Coast fuel. A good deal of the demand is centering on the California fuel, because of the antiknock qualities attributed to it, but of course all sellers are not handlers of this fuel. Jobbers as a rule are not booking ahead for any extensive period, but are rather covering their needs as they arise, carrying not more than one or two days' supply. The market situation appears steady, with the price seemingly pegged at 11¼ cents, but the distributors, in view of the lateness of the season, are taking no chances. While there appears to be no likelihood of any immediate change, any change in the tank car market would probably be downward, so jobbers figure they have nothing to lose by pursuing an ultra-conservative buying policy. Marketers are devoting considerable of their selling activities to pushing fuels, and are getting satisfactory response.

Jobbing markets at other terminal points in East Coast territory have sagged off somewhat. The half-cent break at Bayonne some time ago, bringing the market down to 11¼ cents from the peak of 11¾ cents for the year was not immediately reflected at other eastern distributing points. The market has since sagged and refiners have taken the situation in hand with price reductions bringing the markets down to a parity with the New York price. Current quotations at principal distributing points in East Coast territory, aside from New York, follow: Boston, delivered, 13 cents; Chelsea, Mass., 13 cents; Tiverton, R. I., Providence, R. I., delivered, 13 cents; Philadelphia, 11¼ cents; Marcus Hook, Pa., 11¼ cents; Carteret, 11¼ cents; Norfolk, 11¼ cents; Baltimore, 11¼ cents; Portsmouth, Va., 11¼ cents; Jacksonville and Tampa, 11 cents. Reports from refiners operating at these other points indicate that the open market price reductions have tended to stabilize the markets and have eliminated much of the price shading which had developed on competitive selling before the reductions went into effect.

### Tank Wagon Gasoline

Refiners and marketers continue to maintain the 18-cent price on tank wagon deliveries. There has been a good volume of business reported. While the weather has turned quite cold, there has been no appreciable let-down in motoring, and marketers are optimistic regarding the outlook for a heavy gallonage over the entire winter. The habit of "laying up" automobiles during the colder months is rapidly getting out of style in the East. The widespread popularity of the closed car, together with the more efficient power plants of the modern automobile, in addition to all the shutters, antifreezing compounds and other aids, have tended to make automobiling more of a year-around proposition in the East. Refiners naturally do not expect records to continue to hold at midsummer levels but do believe the percentage drop in sales during the winter will not be as severe as in former years.

Widespread acceptance of high-test motor fuels is another factor making for increased motoring in this area over the winter season. Refiners have developed in their premium fuels a gasoline that gives quick starting on the coldest day, and a smoothly running motor in almost any weather.

While independent distributors continue to sell gasoline at retail at 2 cents under the prices established for the leading brands, there is no disturbance to the price basis of these leading brands. Retailers are working on a 2 to 3-cent margin on their gasolines, and naturally are not in position to pursue the same price-cutting merchandising methods they were using a year or so ago when through secret rebates, etc., they were obtaining as much as 6 or 7 cents margin on all of their sales, and were willing to give the consumer half of this margin in the form of price cuts if they could increase their business. Retail stations in East Coast area are becoming more and more an oil company proposition, and with the dwindling in the number of independently operated filling stations there can be anticipated a corresponding improvement in marketing conditions for refiners and marketers.

### France Buying Gasoline

France has been a heavy buyer in the gasoline market this week. Five cargoes, aggregating close to 40,000 tons in all, were confirmed during the week, with other sales reported. One cargo, mixed, comprised 5,000 tons of 64-66 375 endpoint at 11¼ cents and 2,000 tons of water white kerosene at 7⅝ cents. A second was made up of 7,500 tons of 64-66 375 endpoint at 10⅞ cents. The third cargo was mixed, 5,000 tons of 64-66 375 endpoint at 10⅞ cents, and 2,500 tons of water white kerosene, the latter at an undisclosed price. A fourth cargo confirmed was of 4,000 tons of 64-66 375 endpoint at 11¼ cents. The fifth was 7,500 tons of 64-66 375 endpoint at 11¼ cents and U. S. Navy at 9⅜ cents. All of these cargoes were out of the Gulf, and at 11¼ cents for 64-66 and 9⅜ cents for Navy represented advances of one-eighth cent for the week.

Export gasoline demand has swung back to the Gulf after considerable business diverted to California when the California quotation was under the parity with the Gulf Market. Following the closing of several cargoes in California, Pacific Coast refiners advanced their prices, and this action, together with a cut at the Gulf, brought the business back to the latter market. California refiners this week, however, are reported to have nullified their recent advance on export quotations, and are attracting more inquiries.

Principal refiners in the East Coast area are reported closely sold up on their export grades on gasoline and naphtha. In several instances, refiners are reported to have contracted for the bulk of their production clear through December, leaving little surplus stock to be offered in the open market here. Continental buyers have not been in the market for usual quantities for some time past, up to this week, and it is expected that considerable buying which had been held back in anticipation of lower prices will be coming through now.

### Fuel Oil

The market holds unchanged at $1.05 a barrel, bulk, f.o.b. East Coast refinery terminals, with a good movement reported. Interest is centering in the outlook for the market at the year's end. Beginning January 1, next, the Gulf Oil Corp. begins delivery on its shipping board contract at this port. The contract, running for three years, calls for 3,600,000 bbls. of bunker "C" per year at an average price of 92 cents a barrel, at terminals, plus 5 cents a barrel for barging alongside within the harbor limits. The bunker oil market here was $1.15 when this contract was made, and subsequently declined 10 cents a barrel. Predictions have been made that when Gulf starts its deliveries on the shipping board contracts, other refiners will be forced to follow suit and give their large steamship accounts fuel oil deliveries at the same price basis. At the current writing, it is not known just how the large refiners will handle the situation. If the agitation for curtailment in Venezuela makes any progress by the end of the year, it is expected the fuel oil market will immediately reflect the better outlook thus rendered. Should the move for Venezuelan curtailment lag, however, and large quantities of South American fuel oil continue to find their way to Atlantic Coast refineries, the market position will be far from strong.

Some improvement is looked for by the end of the first quarter of 1929, when the Lago refinery at Aruba goes into operation. At present, Pan American is bringing Lago Venezuelan production to refineries at New York and Boston, where the oil is being refined, with the bulk of it turned out as bunker fuel oil. Opening of the Aruba refinery will not only keep much of this oil off the market at Atlantic Coast ports, but will cut the fuel production, in as much as the oil will be cracked for maximum gasoline yield, with a resulting smaller residue of fuel oil. This development, however, is still some five or six months off, and any real curtailment in Venezuela appears fully as distant. Under these circumstances, it is little wonder that the fuel oil situation is giving refiners concern.

Industrial fuel oil volume continues to hold up well, with refiners carrying a heavy volume of contract business on their books for the remainder of the winter.

### Kerosene

Firm markets and heavy consumption tell the story again this week. Refiners in East Coast markets are firm at 9 cents, refineries, for water white in tank cars. Jobbers in this territory have been ordering forward rush shipments this week, the arrival of a sudden cold snap having materially speeded up the demand. Refiners have also been busy in their tank wagon departments, with the market continuing held at 15 cents. Stocks appear a little more liberal here, but there is nothing resembling a general surplus. The market here has held up well in the face of lower prices at Pennsylvania and Group 3 points, and jobbers are watching the market closely to detect any signs of weakening. Considerable quantities of kerosene, both bulk and cased, have moved into export channels this week. Prices are strongly maintained for both prime and water white grades. Much of the buying has been out of the Gulf during the week, although refiners at North Atlantic ports have also moved good quantities. The spurt in export buying, it is expected, will take up any slack which might develop with larger production at East Coast refineries. This expectation is borne out by reports of some refiners indicating they have sold considerable quantities of kerosene to foreign buyers for several weeks ahead. Notwithstanding lower prices in some of the markets contiguous to East Coast territory, refiners in this area have held their markets well, and no outside shipments of any consequence have come into the area.

### Gas Oil

The market for 32-36 gas oil continues quotable at 5¼ cents, with refiners reporting a fair movement. The advent of colder weather has further stimulated furnace oil sales, and 28-30 gas oil is coming in for much better buying. Quotations on this oil range all the way from 4¾ to 5 cents, with 4⅞ cents generally the inside quotation of sellers. Some of the lower grade oil can be bought down to 4½ cents. The large industrial consumers are in the market for liberal quantities of gas oil. Most of this oil is moving into consumption on contract, although there is still quite a good deal of supplementary buying going through.

### Diesel Oil

Refiners showed considerable interest in a report that the White Star Line had decided its newest passenger giant would be designed for electric drive. Although the type of motor power has not been announced, the decision is regarded as a constructive step from the standpoint of Diesel oil dealers, and it is expected the White Star Line's decision will have an important bearing upon the construction programs of some other lines.

There has been no change in the actual market situation. Refiners continue to book business at $2 per barrel at New York and New Jersey refinery terminals, and are moving out a good deal of oil at this price. Ship operators have about dropped their agitation for a lower price basis on Diesel oil, after several months of comment anent the wide spread between the price for this fuel and that quoted currently on bunker "C." The pessimistic statement of some ship operators as to the effect this differential would have on the Diesel program have proved unfounded. Industrial consumption of Diesel oil has been holding up well to average for this season, with the outlook favorable for the remainder of the year.

### Lubs

Bright stocks have weakened further. Bright stock, dark, is available at 40½ cents, with the light grade quotable at 42½ cents. While the market has eased off a little on other cylinder stocks, there have been no price reductions made in spot quotations. It is reported that prices can be beat by about a quarter cent on the average in cases where a buyer is willing to put out a firm bid.

Seasonal decline in demand for automobile lubs is looked for and buyers are using this as an argument for lower quotations on the general line. Stocks of lub oil on spot, however, are not of large amount, and holders generally exhibit firm price views, holding the present situation at the refineries does not warrant any widespread or general cuts in spot quotations.

Red and pale oils have been without change. Stocks are fairly large, and

(Continued on Page 131)

# Design Visible Distillation Apparatus

## Bureau of Mines Perfects Unique Laboratory Equipment for Experimental Study of Fractionation Problems. Operation Continuous

By Ralph H. Espach*

The value of careful fractionation in the manufacture of petroleum products is recognized more and more by petroleum refiners. Recent studies have shown that the quality of the products depends largely on the type of fractionating equipment and on the care used in operating the equipment. For example, Rue[1] has shown that careful fractionation of pressure distillate will greatly reduce the amount of chemical treatment necessary to produce finished gasoline. The advantages of the combination of pipe still and bubble tower in obtaining good fractionation are well recognized in the petroleum industry. However, the equipment designed in the past has in general been not been given, as this subject has been discussed previously by Cooke and Rue[2]. It is believed that the distillation curves of the products obtained from this apparatus show clearly its capabilities.

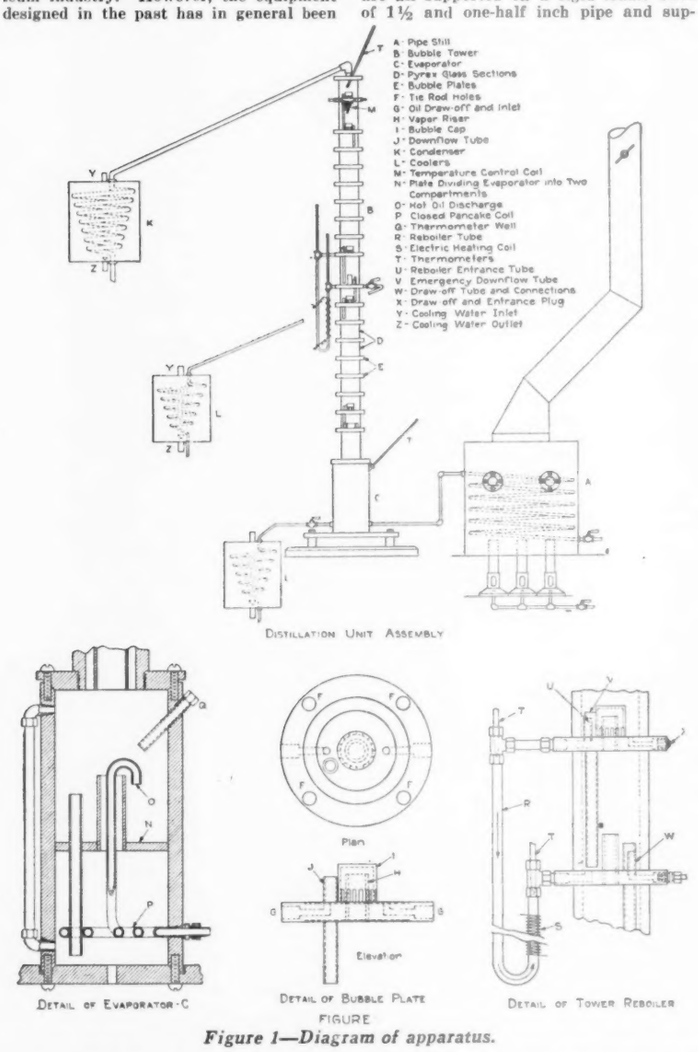



*Figure 1—Diagram of apparatus.*

### General Design

The design of the apparatus in general follows that of commercial installations of pipe stills and bubble towers. Special attention was given, however, to details of design and construction which would improve flexibility of operation, minimize corrosion and facilitate observation of action within the apparatus. The pipe still, bubble tower, condenser and coolers are all supported on a rigid frame built of 1½ and one-half inch pipe and supplied with water, gas and electric and drain lines. The apparatus as arranged for one series of experiments is shown in Figure 1.

### Pipe Still Construction

The pipe still (A), Figure 1, as arranged for gas heating, is 15 by 12½ by 11¾ inches high and is divided into three parts: A combustion chamber, a tube chamber, and a flue. It is made of one-fourth inch transite board bolted together and reinforced with small angle iron. An opening in the bottom of the combustion chamber allows the insertion of three Fisher burners. The bank of one-eighth inch tubes is inserted into the tube chamber through a side opening which is closed by a small door made of transite. The stack breeching is fitted over an opening in the top of the flue. The inside surface of the furnace is thickly painted with water glass and covered with fiber asbestos.

The water glass when dry cemented the fiber asbestos to the transite board, thus protecting it from the direct heat of the burners. The pipe coil is made of 10 one-eighth inch nipples 10 inches long and two one-eighth-inch nipples 12 inches long connected by ells into a continuous coil. The coil has approximately 1 square foot of internal heating surface. The tubes are staggered to permit maximum contact with the hot gases passing downward over them. An electric muffle furnace of suitable design may be used instead of the gas-fired furnace to heat the pipe coil.

### Bubble Tower Construction

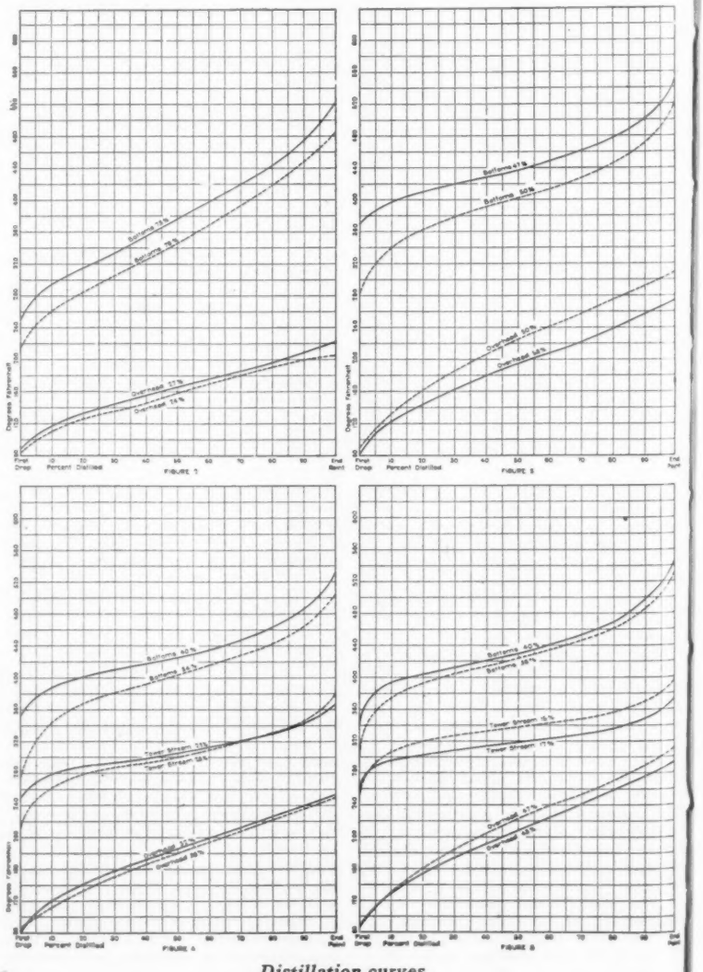
The tower (B) consists of stainless steel bubble plates separated by pyrex glass sections. The whole tower is supported on an evaporator (C.) The glass sections (D) are 2 inches outside diameter with ground ends to minimize leakage. The stainless steel plates (E) between the glass sections are three-eighths inch thick and are grooved one-sixteenth inch deep on each side to receive the ground edges of the glass sections; gaskets are inserted between glass and steel to insure a vapor-tight joint. The plates extend one-half inch beyond the glass walls to provide for holes (F.) Tie rods pass through these holes and bolt the assembled sections together into one unit and made the tower rigid. Each plate is drilled to provide an oil draw off and an oil inlet (G.) Down-flow tubes (J) keep a one-half inch layer of condensate on each plate, causing the vapors to pass through at least one-fourth inch of oil (the slots in the caps are one-fourth inch high.)

At the bottom of the tower is the evaporator into which the heated oil from the furnace is discharged, liberating vapors which pass up through the tower. This evaporator is 3 inches inside diameter and 7¾ inches high.

The tower is insulated by surrounding it with a brass jacket lined with one-fourth-inch of sheet asbestos. Windows are cut out of the jacket on two opposite sides, and are closed with sheets of clear mica, thus keeping a dead air space between the tower and the windows and yet permitting observation of the action in the tower. The evaporator and hot-oil transfer line are insulated with asbestos fiber.

### Condensers and Coolers

The condenser (K) consists of 8 feet of one-half inch outside diameter Shelby steel tubing with one-sixteenth inch wall bent into a conical helix, in a container through which water can be circulated.



*Distillation curves.*

much too large for convenient laboratory use.

The present paper describes a continuous distillation apparatus for the laboratory study of fractionation. This apparatus has given very satisfactory results in the study of different crude oils and petroleum products. A discussion of the theory and action of bubble towers has

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[1]Rue, H. P., "Some Effects of Fractionation on the Chemical Treatment of Gasoline:" The Ref. and Nat. Gas. Manufac., vol. 7, No. 5, May, 1928, p. 96; Nat. Petrol. News, vol. 20, No. 17, April 25, 1928, p. 48; The Oil and Gas Journal, vol. 26, No. 49, April 26, 1928, p. 142.

[2]Cooke, M. B., and Rue, H. P., Studies in the Fractional Distillation of Crude Petroleum: Tech. Paper 431, Bureau of Mines, 1928, in press.

The coolers (L) are similarly built but consist of 5 feet of one-fourth inch Shelby tubing with one-sixteenth inch wall in appropriate water containers. Glass graduates are clamped under the outlets of the condenser and cooler coils to receive the distillates.

### Operation

The charging stock is fed to the still under positive pressure, through a control valve. The hot gases from the burners passing over the pipe coil heat the oil, which in turn heats the evaporator and then the tower as the hot vapors ascend. The heat is regulated to obtain a predetermined percentage of "bottoms" (oil from the bottom of the evaporator.) Too-great heat causes an excess of vapors to go up the tower; conversely, insufficient heat increases the percentage of bottoms. The temperature at the top of the tower is controlled so that the desired amount of "overhead" product will be obtained through the condenser.

This temperature is regulated by circulating cool water through the temperature control coil (M) which causes a part of the vapors passing around the coil to condense and collect on the tower plates. The tower will operate better as a fractionator when some water is circulating through the coil, causing oil to reflux down the tower, than when the coil is not used. The "tower stream," (condensate taken directly from a bubble plate), is regulated by control valves at the plate draw off.

The temperature differential between the evaporator and the overhead vapor may be varied over a comparatively wide range. The maximum differential is reached when the quantity of reflux condensate is nearly sufficient to flood the tower; the minimum, when no reflux occurs and the only heat loss is due to radiation from the tower. The charging rate may also vary widely, reaching a maximum when the tower is nearly flooded, and a minimum when the amount of heat carried by the oil vapor is insufficient to maintain the desired temperature in the tower. Experimental runs on the unit showed that any quantity between 0.4 and 0.8 gallons per hour may be satisfactorily handled. Temperature differentials have been as high as 275 degrees Fahrenheit.

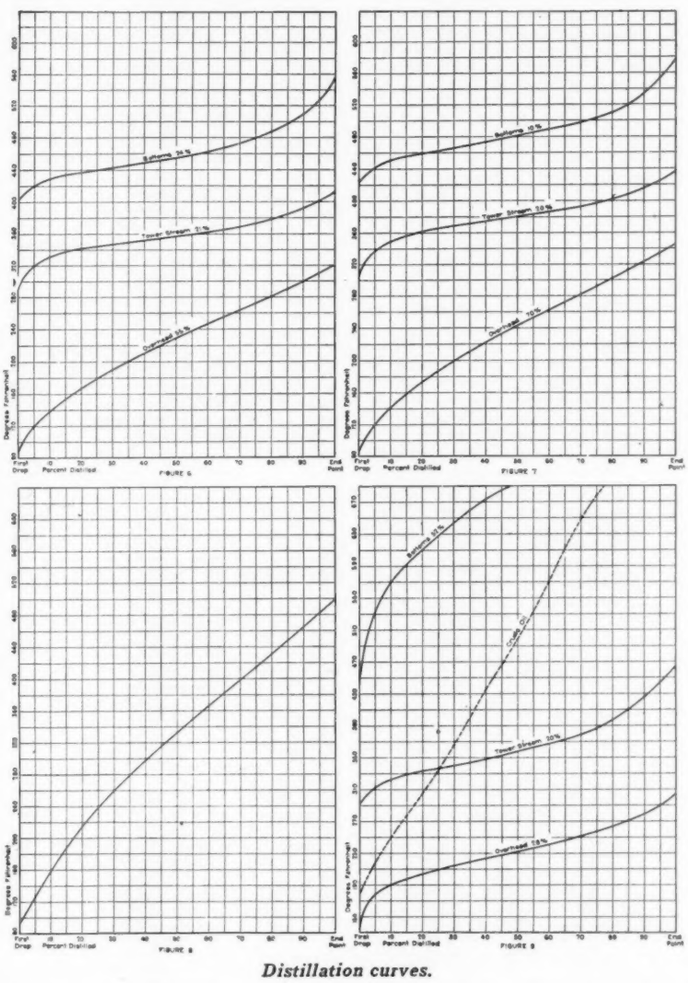
In each run the apparatus is adjusted until the desired quantities and temperatures are obtained and the bubble tower is operating smoothly and has come to equilibrium. Data on the operating conditions are recorded at 10 or 15 minute intervals. Samples of the various products are collected and tested for color, gravity and distillation range. The distillation curves are plotted for study.

### Effectiveness of Fractionation

The solid curves in Figures 2 to 5 show the distillation ranges of products made with the apparatus arranged as shown in Figure 1, and the dotted curves represent products made without using the "reboiler" at the side of the tower (see construction of reboilers and detail drawings, Figure 1) and with a plain-type evaporator without reboiler coil and circulation equipment. The charging stock was a typical untreated pressure-still distillate (distillation curve, Figure 8).

Discussing first the runs made without using the reboilers, the dotted curves in Figure 2 represent products made with a charging rate of 0.565 gallons per hour, yielding 76 per cent overhead distillate and 24 per cent bottoms. Figure 3 shows the distillation curves (dotted lines) when the unit was charging 0.758 gallons per hour and the yield was 50 per cent overhead distillate and 50 per cent bottoms. (Percentage figures are based on the total amount of distillate recovered in the receiver—not on the quantity of stock that was charged. The percentages do not take into account distillation losses which varied from 2 to 6 per cent of the charging stock.) These curves indicate good separation of products, especially in Figure 2 which shows a gap of 9 degrees Fahrenheit between the endpoint of the overhead stream and the initial boiling point of the bottoms. In Figure 3 there is an overlap of 27 degrees Fahrenheit. By referring to Figure 3 this overlap is shown to be equivalent to 3 per cent of volume of the bottoms.

The unit was then run, taking an oil cut or stream from the sixth bubble plate above the evaporator. The charge to the unit was 0.447 gallons per hour, which was separated into 38 per cent overhead distillate, 28 per cent tower stream, and 34 per cent bottoms. The dotted curves in Figure 4 represent Engler distillations of these products and show excessive overlapping, especially of the bottoms and the tower streams. A similar run was made, taking the tower stream from the seventh bubble plate and increasing the charging rate to 0.683 gallons per hour; 47 per cent overhead distillate, 15 per cent tower stream and 38 per cent bottoms were obtained. The dotted curves (Figure 5) also show excessive overlapping of products.




*Distillation curves.*

Several runs were made with the unit operating at different charging rates and drawing two and three products from the side of the tower. Distillation curves on the products from these runs overlapped considerably, in some cases 50 and 60 per cent, indicating very poor separation.

A study of these curves shows that the tower without reboilers is a satisfactory fractionator when separating the charge into only two products, but that the fractionation is rather poor when three products are obtained, and is of no value when more than three products are made. About 12 plates are required for good fractionation.

### Reboilers Construction

The reboiler in the evaporator is very simple in principle. (See detail of evaporator (C) Figure 1.) The evaporator is divided into two compartments by a horizontal plate, (N); the hot oil from the furnace discharges into the upper compartment at (O), after passing through a closed coil (P) in the lower compartment. As the oil discharges into the upper compartment, vapors are liberated and pass upward through the tower. The remaining oil accumulates to a depth of 1½ inches in this compartment then flows down a tube into the bottom compartment where an oil level of 1½ inches is maintained by regulating the amount of oil drawn off as bottoms. The coil (P), mentioned above, is immersed in the bottoms collected in this lower compartment; the hot oil from the furnace, in passing through this coil, vaporizes the more volatile constituents in the bottoms. These vapors pass through a tube into the upper compartment and up into the tower.

The reboiler on the side of the tower is a U-shaped steel tube (R) (see detail of tower reboiler, Figure 1.) The oil flows through the reboiler and is heated by a small electric heating coil (S) of chromel wire, which is wrapped around the upflow leg of the tube. By controlling the current with a rheostat the temperature of the oil passing through the tube may be regulated as desired. A small thermometer is placed where the oil leaves the upper plate and another at the entrance to the plate below. The chromel wire is covered with alundum cement, baked on, and the whole reboiler is covered with an asbestos fiber plaster.

Two inches of the steel tube at the bend are left uncovered to avoid heating the other leg of the tube. If the tube should become heated on the downflow side of the reboiler, some light ends would distill off; these vapors would rise against the downward oil stream because of the relatively slow velocity of the oil through the tube, and would interfere with the flow of oil through the heater. The oil enters the reboiler through a vertical tube (U) with an open end one-half inch above the upper plate, which is connected with the reboiler, thus leaving one-half inch of oil on the plate.

Should the oil fail to pass through the reboiler, the oil level on the plate would build up until it reached three-fourths of an inch; it would then flow down an emergency tube (V) similar to the others in the tower. The oil after being heated discharges into the "reboiler section" of the tower. The plate in this section has a fifteen-sixteenths inch riser but no bubble cap, so that the vapors rising in the tower pass through this section but do not bubble through the oil on the plate. The tower stream is taken from this plate through a vertical draw-off tube (W), the open end of which extends one-half inch above the plate. If no stream is being taken from the tower at this point, the oil level on the plate will increase to three-fourths of an inch and then flow down a regular tube to the plate below.

### Use of Reboilers

The added effectiveness of the tower when "reboilers" are used to distill off the small amount of light ends remaining in the bottoms and the tower stream is shown by the solid curves in Figures 2 to 5. The charging rates and the percentages of distillates, tower stream and bottoms are nearly the same in these runs as in the corresponding runs when the reboilers were not used. The temperature of the vapors in the evaporator is lower for the same percentage of bottoms, but the overhead vapor temperature of course is about the same. The reboiler at the side of the tower raised the temperature of the stream passing through it approximately 50 degrees Fahrenheit.

The distillation curves of the products obtained when charging 0.568 gallons per hour and obtaining 73 per cent overhead instillate and 27 per cent bottoms are shown by solid lines in Figure 2. The use of reboilers has increased the temperature gap between the endpoint of the distillate and the initial boiling point of the bottoms from 9 to 30 degrees Fahrenheit. When charging 0.734 gallons per hour and obtaining 53 per cent overhead distillate and 47 per cent bottoms, products were obtained with distillation ranges as shown by the solid curves in Figure 3. The efficiency of fractionation under these conditions is surprising (a gap of 100 degrees Fahrenheit) but is believed to be within the capabilities of the tower. Part of the separation may be due to the nature of the charging stock, a cracked product composed in part of somewhat unstable hydrocarbons which under the influence of heat may polymerize or decompose. However, essentially the amount of polymerization would occur in a corresponding run without the use of the reboilers; therefore, it is believed that the "gap" found is due mainly to good fractionation.

The results of running 0.436 gallons per hour and obtaining 32 per cent overhead distillate, 28 per cent off the tower, and 40 per cent bottoms are shown in Figure 4. Figure 5 gives the results of the distillations on products obtained when charging 0.705 gallons per hour and obtaining 43 per cent overhead distillate, 17 per cent off the tower, and 40 per cent bottoms. Comparing these curves with the dotted curves it is evident at once that excellent separation has been attained. The curves show clearly the effectiveness of the reboilers by the manner in which the extremities of the curves for "bottoms" and tower streams have been flattened. In Figure 4 there is an overlap of 5 degrees Fahrenheit between the endpoint of the overhead stream and the initial point of the tower stream representing less than 1 per cent of the tower stream, and an overlap of 15 degrees Fahrenheit between the endpoint of the tower stream and the initial point of the bottoms representing less than 3 per cent of the bottoms. Figure 5 shows an overlap of 31 degrees Fahrenheit between the overhead stream and the tower stream representing 7½ per cent of the tower stream, and an overlap of 32 degrees Fahrenheit between the tower stream and the bottoms representing 3 per cent of the bottoms.

Figures 6 and 7 are distillation curves of products obtained on further runs with the unit. For those of Figure 6 the charging rate was 0.531 gallons per hour. Yields of 55 per cent overhead distillate, 21 per cent off the tower, and 24 per cent bottoms were obtained. The separation is good. For those of Figure 7, 0.486 gallons per hour were charged,

(Continued on Page 131)

# Brief Items for Petroleum Refiners

## JUDGE CHAMBERLIN DIES AT HOME IN CLEVELAND

In the passing of Judge C. D. Chamberlin at his home in Cleveland, Ohio, October 24, the eastern refining industry lost one of its outstanding figures. His death followed a long illness during which he continued to serve the refining industry of the eastern area as Advisory Counsel of the National Petroleum Association.

Judge Chamberlin's first connection with the oil industry was in 1884 when

Judge C. D. Chamberlin

he became a partner in the Buckeye Oil Co., a jobbing concern. He had previously taught school and studied law. In 1906 he was offered the position of secretary of the National Petroleum Association an organization which had recently been formed among the independent refiners in the eastern states. As the active head of the association he played an important part in its gradual growth until it became an important factor in the oil business.

After serving the association as secretary for several years he was made general counsel and continued in that capacity until ill health forced him to retire. He continued his connection in an advisory capacity and at the annual meeting of the association in September sent a message to the membership. The high esteem in which he was held by the members has been shown in the messages sent him at the recent annual and semiannual meetings which he had been unable to attend.

## RESUME OPERATIONS AT WALTERS, OKLA. PLANT

The Walters Refining Corp. has taken over a refinery at Walters, Okla. and are now operating it on basis of 1,000 bbls. daily. The plant which was built in 1920 by the Southern Oil Corp. had been shut down for several years when taken over by the Walters corporation. The plant is being operated with Winkler County, Texas and Duncan, Okla. crude oil.

Charles R. Virtue of Yale, Okla. is president of the corporation. Associated with Mr. Virtue are Herman Sinken, vice president; B. E. Moses, secretary and C. J. Doney, treasurer, all of Kansas City, Mo. The sale of the plant's products will be handled by the Petroleum Oil Corp. of Kansas City and Tulsa.

## ROXANA'S REFINERY ENLARGES MARKET FOR WEST TEXAS CRUDE

Construction work on the new refinery of the Roxana Petroleum Corp. to be located at Deer Park east of Houston is to start immediately. The Houston Port Terminal Railroad already has started extensions to its tracks to connect to the site. Material is in transit and construction work will start within a few days.

The ultimate capacity of the plant has not been announced, but it is understood the initial operations will be on a basis of 10,000 bbls. daily. Construction work is to start immediately connecting the refinery with West Texas production. The line is to be built by the Shell Pipe Line Corp. an affiliated company.

The Shell corporation at present has a 10-inch line originating at McCamey in Upton County and terminating at Healdton, Okla., where it ties into the Shell corporation's main line to St. Louis. The 10-inch carrier has a daily capacity of around 45,000 bbls. The corporation is now making a survey for a line from the main line station at McCamey to the Gulf Coast with Houston as the tidewater terminal. The line is to be 10-inch.

### West Texas Outlets

With the Shell corporation's second trunk system from West Texas, the Permian Basin will have 10 trunk outlets by the middle of next year. At the present time there are seven main lines in operation and two big carriers under the course of construction. One of the latter is scheduled for completion late this year and the other is to be finished by late spring. There, too, is the possibility that still another main line will be built.

Of those lines in operation Humble Pipe Line Co. has two, Shell Pipe Line Corp., Gulf Pipe Line Co., Magnolia Pipe Co., Illinois Pipe Line Co. and Pasotex Pipe Line Co. each have one. The Illinois company's system ties into the Humble company's Ingleside harbor line near the terminal. However, that system can be counted as a separate outlet because the Humble company looped its line sufficiently from the point where the Illinois company ties in to the coast to care for the added load.

Atlantic Pipe Line Co. is nearing completion on its line from Midland to a terminal near Port Arthur and Texas Pipe Line Co. is building a carrier from West Texas to its tidewater terminal near Houston, which is to be finished late next spring. United Producers Pipe Line Co. is the potential builder of what may prove the eleventh trunk line system out of West Texas.

West Texas has a pipe line outlet for 242,000 bbls. at the present time and 85,000 bbls. more line capacity is being built. The Shell corporation's trunk line to tidewater will have a capacity of 45,000 bbls. daily. Figuring this proposed project West Texas will have an outlet through trunk lines amounting to 372,000 bbls. daily by the summer of 1928. If the United company carries through its plans, which are being held up by litigation, then West Texas will have an outlet for 50,000 bbls. more.

### Pipe Line Capacity

Below is given in tabular form the pipe line companies operating in West Texas, capacities, length, size and terminals:

| Company— | Origin and Term. | Size Inch | Lgth. | Cap'ty |
|---|---|---|---|---|
| †Atlantic P. L.: | | | | |
| Midland to Artreco docks | | 10 | 502 | 35,000 |
| Gulf P. L.: | | | | |
| Midland to coast via Ranger | | 10 | 210 | 25,000 |
| Humble P. L.: | | | | |
| Kemper to coast via DeLeon station | | 2—8 | 193 | 45,000 |
| Humble P. L.: | | | | |
| Kemper to Ingleside. | | 10—12 | 354 | 55,000 |
| Magnolia P. L.: | | | | |
| Crane to coast via DeLon station | | 8 | 220 | 32,000 |
| Illinois P. L.: | | | | |
| Yates to Del Rio | | 2—8 | 137 | ..... |
| Del Rio to Lytle | | 10 | 125 | 25,000 |
| Pasotex P. L.: | | | | |
| Hendricks to El Paso | | 8 | 196 | 15,000 |
| Shell P. L.: | | | | |
| McCamey to Okla. | | 10 | 485 | 45,000 |
| *Shell P. L.: | | | | |
| McCamey to coast | | 10 | 500 | 45,000 |
| †Texas P. L.: | | | | |
| Yates to Houston | | 12 | 525 | 50,000 |
| United Pro. P. L.: | | | | |
| Yates to coast | | 10 | 435 | ‡50,000 |

*Surveying. †Under construction. ‡Proposed.

## WILCOX OIL AND GAS CO. OPERATES REFINERY

The Wilcox Oil & Gas Co. has started operating its 1,500-bbl. refinery at Bristow, Okla. The plant has been owned by the Wilcox company for several years. For a period of two years it was leased and operated by the Riley Petroleum Co. which shut down the plant early this year.

According to officials of the Wilcox company the Bristow plant will be enlarged and cracking facilities added as part of its expansion program in the refining and marketing ends of the oil business. The Wilcox company is one of the largest independent producing companies in the Mid-Continent Field and is also a manufacturer of natural gasoline.

During the past summer the company built two large superstations in the downtown district of Tulsa. These stations include all gasoline, oil and grease service facilities together with separate garages for customers. The company expects to gradually expand its marketing facilities to take care of its refinery output.

### FURNACE OIL DISTRIBUTION

CHICAGO, Oct. 27.—Distributers by tank wagon of fuel and furnace oil in this city are still cutting prices to the larger consumers. In some instances contracts have been for deliveries at the plant of the buyer at prices which are barely 1 cent a gallon above the cost of the oil plus freight to this city. Out of this cent all the expenses of actual distribution as well as the overhead charges must be paid and any actual profit earned. Several dealers have stated it is impossible to make a profit out of the 1 cent between the selling price and the laid down cost of the oil. Any concern that makes such prices must, if it carries out the contract, simply make good the losses from that contract out of the profits of other contracts made at a better price. Several attempts have been made to correct this situation but so far the results have been disappointing.

### ROWSEY BUILDING PLANT

G. L. Rowsey, for several years superintendent of the refinery of the Amarillo Refining Co., Inc., at Amarillo, Tex., is now in charge of construction for the Great West Refining Co. The latter company is building a 5,000-bbl. refinery at Big Spring in Howard County, Texas.

The Amarillo refinery has been sold to The Texas Company. Reese Allen of Wichita Falls, Tex., was owner of the Amarillo refinery and is president of the Great West Refining Co. Mr. Rowsey will continue in charge of operations after the refinery is completed.

## NEW Q.D.A. IS FINDING FAVOR AMONG JOBBERS

CHICAGO, Oct. 27.—The new Q.D.A. in the Standard of Indiana territory, has been in effect since October 1 and is today generally accepted as a distinct factor for the better in the oil industry. When the new terms of the Q.D.A. were announced they were so drastic and even revolutionary as compared with the terms under the old agreement, that there was a great outcry from distributors operating under such contracts. They claimed they were unfair, that they would be put out of business and that something must be done to secure better terms. Inquiry develops that in the great majority of cases the dealers who obtain their supplies by tank wagon delivery have finally signed the contracts. They are still doing business. To enable them to do this at a profit it has been necessary that a great many consumer contracts or agreements, many of them sub-rosa, have been cancelled. This is a good thing for the individual dealer and for the industry of this territory as a whole.

A part of the success which has been secured for the new scale is due to the efforts of the independent oil organizations. The state associations have backed the plan and in several of the states where the dealers were vitally interested in the success of this measure which was planned to do away with secret price cutting made possible by large profits, the officers of the state associations have called general and group meetings at which they explained the new terms and pointed out how beneficial they were for the legitimate dealers.

There is one of the changes in the new plan from that previously in effect which the dealers must remember and comply with if they wish to secure their discounts and that is that the seller does not keep an account of the sales, but each customer must report to the seller on or before the tenth of the following month the quantity of gasoline purchased during the previous month if he is to be paid the discount due to him. The tickets showing the deliveries made must accompany the statement of purchases. If this is not done no payment of discounts on the quantity purchased can be made by the seller. When the returns are correctly and promptly made the checks for the discounts due will be forwarded to the purchaser on the fifteenth of the month.

### FUEL OIL LOWERED IN ENGLAND

NEW YORK, Oct. 29.—Fuel oil prices have been reduced 2s. 6d. per ton in England on both furnace oil and Diesel oil. The new quotations, in bulk, for inland consumption, are £3 7s. 6d. on fuel oil and £4 per ton on Diesel oil. Bunker prices remain unchanged at £3 7s. 6d. for fuel oil and £4 2s. 6d. for Diesel oil.

### RECONSTRUCTING REFINERY

CHATHAM, Ontario, Oct. 27.—Reconstruction of the Regal Oil & Refining Co.'s plant at Calgary, recently damaged by explosion and fire, is under way. The plant is being enlarged to 1,000 bbls. capacity. It is announced that if the production is increased from Turner Valley, a pipe line will be laid to that field.

### BUYS SPARCO INTEREST

SHREVEPORT, La. Oct. 29.—Shreveport Producing & Refining Co., Inc. has bought W. B. Strother's interest in the Sparco Gasoline Co., and is organizing a subsidiary to handle the retail distribution of Sparco gasoline in Shreveport in the 17 stations handling the product.

# Natural Gasoline Manufacture

## REFINERY DEMAND 10% GREATER THAN IN 1927

Refinery utilization of natural gasoline based on government reports for the first eight months of this year is increasing at the rate of 10.6 per cent. For the eight-month period the refiners in United States consumed 22,738,000 gallons of natural gasoline as blending material in the production of finish gasoline. For the first eight months of 1927, the refinery demand totaled 20,552,000 bbls.

The following table gives the refinery demand by months for 1927 and 1928 (figures given in thousands of barrels):

| | 1928 | 1927 |
|---|---|---|
| January | 2,940 | 2,595 |
| February | 2,827 | 2,475 |
| March | 2,707 | 2,694 |
| April | 2,836 | 2,603 |
| May | 2,853 | 2,701 |
| June | 2,729 | 2,315 |
| July | 2,802 | 2,642 |
| August | 3,044 | 2,527 |
| September | .... | 2,676 |
| October | .... | 2,934 |
| November | .... | 2,965 |
| December | .... | 3,034 |

Should the 10.6 per cent rate of increase continue over the remainder of the year, the refinery demand for 1928 will total approximately 35,500,000 bbls. This will be about 65 per cent of the total production of natural gasoline. The remainder is sold to jobbers or is blended at bulk stations of refinery organizations which have their own distributing facilities.

The refinery demand for natural gasoline has increased rapidly in recent years. In 1922, the first year in which the Government reported refinery utilization, the demand totaled 3,661,000 bbls. Since that time the requirements have increased as follows: In 1923, 5,487,000 bbls.; 1924, 12,671,000 bbls.; 1925, 19,639,000 bbls.; 1926, 27,696,000 bbls., and 1927, 32,161,000 bbls.

## HAULING WATER AT SEMINOLE

Periodic shortages of water in the Little River Pool of the Seminole Field have caused operators to haul in additional supplies by rail. This has become a general practice at times in the case of the Gillespie and Moran plant in the Little River Pool which has received as much as 10 tank cars of water daily over a three weeks' interval. Because of the recent rains this amount has been reduced considerably.

## A Practical Suggestion

### VOLUME CHART

In the design of fractionating towers and other plant equipment, it is necessary to know the approximate volume of the vapors to be handled under the operating temperature and pressure. A rather simple chart has been found to be of practical value in making an approximate calculation for natural gasoline plants in particular, the chart being based on the equation:

$$V = \frac{359}{M} \times \frac{T_1}{T_0} \times \frac{P_0}{P_1}$$

which in turn is an expression of the gas laws, where

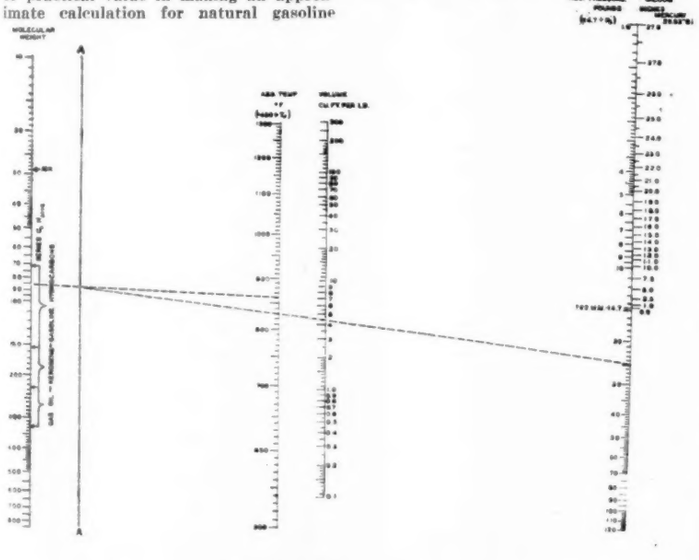
V = volume of vapors in cubic feet per pound,

M = molecular weight of the vapors,

$T_1$ and $P_1$ the actual temperature and pressure of the vapor as absolute,

$T_0$ and $P_0$ the temperature and pressure at standard conditions, namely 460 degrees Fahrenheit, the standard temperature ($T_0$ = 460), and 14.7 pounds the standard pressure ($P_0$ = 14.7).

The fact the formula calls for the molecular weight of the vapor and in ordinary plant work this vapor is in reality a mixture of hydrocarbons, each with a different molecular weight an average or representative molecular weight must be assumed.




However, the composition of the vapor handled is usually known within reasonable limits and it is not so difficult to pick a value approximately equal to the average molecular weight.

The following table of molecular weights for the respective hydrocarbons serves as a basis for the approximation:

| Hydrocarbon— | Molecular weight |
|---|---|
| Methane, $CH_4$ | 16.0 |
| Ethane, $C_2H_6$ | 30.0 |
| Propane, $C_3H_8$ | 44.1 |
| Butanes, $C_4H_{10}$ | 58.1 |
| Pentanes, $C_5H_{12}$ | 72.1 |
| Hexanes, $C_6H_{14}$ | 86.1 |
| Peptanes, $C_7H_{16}$ | 100.1 |

With this as a basis, a representative

(Continued on Page 132)

## SEMINOLE'S NATURAL GASOLINE OUTPUT PASSES MILLION MARK

A new peak was reached in the natural gasoline production of the Seminole Field during the last week as the 1,000,000-gallon mark was passed with the present production at 1,006,000 gallons daily. Still higher production figures are expected as new wells are completed and as the cooler weather approaches, but manufacturers no longer look upon this fact as a hazard as far as the market is concerned. The production in the balance of the Mid-Continent area is falling off about as rapidly as the production in the Seminole is increasing and there is very little likelihood of excess production and a dumping of accumulated stocks and production at low prices as was practiced a year ago.

Of interest, too, is the fact the Seminole City Pool no longer stands as the major producing pool, that position now being held by the Little River and South Little River areas. Even the Bowlegs Pool surpasses the old Seminole Pool but only by a slight margin. This is due to a decline in the old Seminole Pool rather than any great increase in the Bowlegs, although there was a slight increase in the latter.

With 1,006,000 gallons of natural gasoline being produced daily compared with 895,300 a month ago, the increase of 110,700 gallons is centered in a relatively few companies. Of these, the Gypsy Oil Co. shows the greatest increase, its production gaining from 26,000 gallons a month ago to 88,000 gallons daily at present. The Skelly Oil Co. shows an increase of from 9,500 gallons to 28,000 gallons at present, the Pure Oil Co. from 34,000 to 48,000 gallons, Forrest E. Gilmore Co. an increase from 39,800 to 53,000 gallons, and the Cushing Refining & Gasoline Co. an increase from 8,000 to 26,000 gallons. Others showed smaller increases while several showed slight decreases.

In practically all cases the increased production was simply a reflection of the increased drilling activities of the crude oil production division of the respective companies and further increases are expected in proportion to the new work to be completed.

### Future Trend

Many operators believe the decline in the production of the older fields in the area will soon approximate the increase in the new fields and that the peak will not exceed 1,250,000 gallons and will come before the close of this year. At present there are about 85 wells being drilled in the entire area, of which 60 are in the St. Louis Pool. A large part of the increase is expected to come from here, depending upon the success of the drilling operations.

Many of the companies have plans for enlarging their present plants and for new plants, but actual construction work is near a standstill awaiting developments, as new wells are completed. The encroachment of water in some sections and dry holes have defined the field in some sections causing a more cautious attitude to be taken with respect to proposed development. The table included here shows the detailed production in the various fields by the companies operating gasoline plants there.

**PRESENT PRODUCTION NATURAL GASOLINE IN SEMINOLE DISTRICT BY POOLS**

| Company— | Total prod. | Semi-nole | Bow-legs | Earls-boro | Sea-right | Little River and S.L.R. | St. Louis-Pearson | Maud | Misc. |
|---|---|---|---|---|---|---|---|---|---|
| | (Production shown as net daily average in gallons) | | | | | | | | |
| Amerada Pet. Corp. | 30,000 | 3,000 | 13,000 | 14,000 | ..... | ..... | ..... | ..... | ..... |
| Barnsdall Oil Co. | 34,000 | ..... | ..... | 34,000 | ..... | ..... | ..... | ..... | ..... |
| Carter Oil Co. | 175,000 | 60,000 | 10,000 | ..... | 55,000 | 50,000 | ..... | ..... | ..... |
| Crosbie & Moran | 24,000 | ..... | ..... | 24,000 | ..... | ..... | ..... | ..... | ..... |
| Cushing Ref. & Gasoline Co. | 26,000 | ..... | ..... | ..... | ..... | 11,000 | 15,000 | ..... | ..... |
| *Empire O. & R. Co. | 124,000 | 27,000 | 69,000 | ..... | ..... | 28,000 | ..... | ..... | ..... |
| Forrest E. Gilmore Co. | 53,000 | ..... | 7,500 | ..... | ..... | 38,000 | ..... | ..... | 7,500 |
| Gypsy Oil Co. | 88,000 | ..... | ..... | ..... | ..... | 88,000 | ..... | ..... | ..... |
| Independent O. & G. Co. | 28,000 | 8,000 | ..... | ..... | ..... | 20,000 | ..... | ..... | ..... |
| Magnolia Pet. Co. | 32,000 | ..... | ..... | 12,000 | ..... | ..... | 10,000 | ..... | ..... |
| Moran & Gillespie | 22,000 | ..... | ..... | ..... | ..... | ..... | 22,000 | ..... | ..... |
| Pure Oil Co. | 48,000 | 14,000 | 18,000 | ..... | ..... | 16,000 | ..... | ..... | ..... |
| Roxana Pet. Corp. | 10,000 | ..... | 10,000 | ..... | ..... | ..... | ..... | ..... | ..... |
| Sinclair O. & G. Co. | 247,000 | 120,000 | 100,000 | 17,000 | ..... | 10,000 | ..... | ..... | ..... |
| Skelly Oil Co. | 28,000 | ..... | ..... | 20,000 | ..... | ..... | ..... | 8,000 | ..... |
| Victor Gasoline Co. | 47,000 | 7,000 | 21,000 | 19,000 | ..... | ..... | ..... | ..... | ..... |
| Total | 1,006,000 | 239,000 | 248,500 | 140,000 | 55,000 | 261,000 | 47,000 | 8,000 | 7,500 |

*Includes the production of the Indian Territory Illuminating Oil Co.

## ENLARGE PLANT

The Pep Gasoline Co.'s natural gasoline plant located in Section 13-21-8, near Osage, Okla., which was formerly operated by Foster & Davis, Inc., is shut down for enlargement. Facilities are to be added so that the plant can handle additional gas supplies from near-by wells. The plant will be operated by Roy O. Neal of Tulsa. Operations will be resumed about November 5.

## ASSEMBLE EQUIPMENT AT WEST TEXAS PLANT

The Phillips Petroleum Co. has completed the foundations and have started to assemble the equipment for its McCamey gasoline plant in the Crane-Upton County Pool in West Texas. Much of the equipment has been specially designed and cast in special alloys to combat the corrosive action of the hydrogen sulphide gases. Special ventilating equipment has also been made necessary as a protection to the workmen.

Completion of the work is expected about the middle of December. The production will be approximately 75,000 gallons daily. The construction and the operation of the plant is being followed closely by the officials of the company because of these new features and data will be kept after the plant starts operating in studying the nature of any corrosive action and the life of various parts of the equipment where replacements are found necessary.

## SUPERIOR BUYS PLANT

The Superior Oil Corp. has purchased the 12,000-gallon natural gasoline plant 11 miles northwest of Cisco, Tex., formerly owned by the Moody Corp. The plant had been operating under the name of the Adams Gasoline Co., a subsidiary of the Moody Corp.

Major additions and repairs were completed at the plant about six months ago, raising its capacity from 2,000 gallons to 12,000 gallons and while the actual production now is below the capacity of the plant it is the intention of the Superior Oil Corp. to increase the production through the development of additional acreage.

# REFINERY AND CRUDE PRICES

**Quotations on refined products are for interstate or export movement unless otherwise noted.**

## GASOLINE AND NAPHTHA

| | Oct. 30 | | Oct. 23 | | Oct. 16 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 50-52 450 endpoint | .08¾ | .09 | .08¾ | .09 | .08¾ | .08⅞ |
| 56-58 450 endpoint | .08¾ | .09 | .08¾ | .09 | .08¾ | .08⅞ |
| 58-60 450 endpoint | .08⅞ | .09⅛ | .09 | .09¼ | .09 | .09¼ |
| *58-60 437 endpoint (U. S. Motor) | .09568 | | .09720 | | .09746 | |
| *60-62 437 endpoint | .09900 | | .10125 | | .09854 | |
| *60-62 400 endpoint | .10250 | | .10180 | | .10250 | |
| *64-66 375 endpoint | .11000 | | .10830 | | .11000 | |
| 68-70 360 endpoint | .10¼ | .10½ | .10½ | | .10½ | |
| 64-66 437 endpoint (blend) | .09¼ | .09½ | .09½ | .09¾ | .09⅝ | .09¾ |
| **NORTH TEXAS—** | | | | | | |
| 56-58 450 endpoint | .08¾ | | .08¾ | | .08¾ | |
| 58-60 450 endpoint | .08¾ | | .08¾ | .09 | .08¾ | |
| 58-60 437 endpoint (U. S. Motor) | .09 | .09¼ | .09¼ | .09½ | .09¼ | .09½ |
| 60-62 400 endpoint | .09¼ | .09½ | .09½ | .09⅝ | .09½ | .09⅝ |
| 64-66 390 endpoint | .09¾ | | .09⅝ | .09¾ | .09⅝ | |
| 64-66 375 endpoint | .09⅞ | | .10 | .10¼ | .09¾ | .10 |
| 68-70 360 endpoint | .10 | | .10¼ | .10⅝ | .10¼ | |
| 64-66 437 endpoint (blend) | .09¼ | | .09½ | .09⅝ | .09½ | |
| **NORTH LOUISIANA—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) | .09½ | | .09¾ | | .09¾ | |
| **ARKANSAS—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) | .09¼ | .09½ | .09½ | | .09½ | |
| **PENNSYLVANIA—** | | | | | | |
| 52-54 Naphtha | .10¼ | .10½ | .10¼ | .10½ | .10¾ | .11 |
| 54-56 Naphtha | .10½ | .10¾ | .10½ | .10¾ | .11 | .11¼ |
| 58-60 Gasoline | .11 | .11¼ | .11 | .11¼ | .11 | .11¼ |
| 60 Gasoline | .11¾ | .12 | .11¾ | .12 | .11¾ | .12 |
| 62 Gasoline | .12¼ | .12¾ | .12¼ | .12¾ | .12½ | .12¾ |
| 64 Gasoline | .12¾ | .13 | .12¾ | .13 | .12¾ | .13 |
| **CALIFORNIA—** | | | | | | |
| 58-60 437 endpoint (U. S. Motor) domestic | .10 | .11 | .10 | .11 | .10 | .11 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 50-52 450 endpoint (Naphtha) | .08¾ | .09 | .08¾ | .09 | .08¾ | .09 |
| 56-58 450 endpoint | .09 | | .09 | | .09 | |
| 58-60 437 endpoint (U. S. Motor) | .09¼ | .09½ | .09¼ | .09½ | .09¼ | .09½ |
| 60-62 400 endpoint | .09¾ | .10 | .09⅞ | .10⅛ | .09⅞ | .10⅛ |
| 64-66 375 endpoint | .10½ | .10¾ | .10½ | .10¾ | .10½ | .10¾ |
| 68-70 360 endpoint | .10¾ | .11 | .10¾ | .11 | .10¾ | .11 |
| 64-66 437 endpoint (blend) | .09⅝ | .09¾ | .09¾ | | .09¾ | |

*Weighted average prices October 29 as reported by representative refiners. Sales to jobbers only.

## NATURAL GASOLINE

| | Oct. 30 | | Oct. 23 | | Oct. 16 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .10⅛ | | .09⅝ | .09¾ | .09⅞ | .10 |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .10⅛ | | .09⅝ | | .09⅞ | |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .10 | | .09⅝ | | .09⅝ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .10 | | .09⅝ | | .09⅝ | |
| Grade C, 80-90, 375 e.p., rec. 78% | .09⅞ | .10 | .09½ | | .09½ | |
| **NORTH TEXAS—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .10 | .10⅛ | .09½ | .09¾ | .09¾ | .10 |
| Grade AA, 80-87.9, 375 e.p., rec 90% | .10 | | .09½ | .09⅝ | .09¾ | .09⅞ |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .10 | | .09½ | | .09⅝ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .10 | | .09½ | | .09⅝ | |
| Grade C, 80-90, 375 e.p., rec. 78% | .09¾ | .10 | .09¼ | .09½ | .09⅜ | .09½ |
| **NORTH LOUISIANA—** | | | | | | |
| Grade AA, 80-87, 375 e.p., rec. 90% | .10¼ | | .09¾ | .09⅞ | .10⅛ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .10⅛ | .10¼ | .09¾ | | .09¾ | .10 |
| Grade C, 80-92, 375 e.p., rec. 78% | .10 | | .09½ | .09¾ | .09⅝ | |
| **CALIFORNIA—** | | | | | | |
| 75-78, 375-390 endpoint | .07 | .07½ | .07 | .07½ | .07¼ | .07¾ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| Grade A, 72-79.9, 375 e.p., rec. 90% | .10 | .10⅛ | .09⅝ | .09¾ | .09⅞ | .10 |
| Grade AA, 80-87.9, 375 e.p., rec. 90% | .10 | | .09⅝ | .09¾ | .09⅞ | .10 |
| Grade B, 76-83.9, 375 e.p., rec. 85% | .10 | | .09⅝ | | .09⅝ | |
| Grade BB, 84-92, 375 e.p., rec. 85% | .10 | | .09⅝ | | .09⅝ | |
| Grade C, 80-90, 375 e.p., rec. 78% | .10 | | .09½ | .09⅝ | .09½ | |

## BURNING OIL

| | Oct. 30 | | Oct. 23 | | Oct. 16 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 41-43 water white Kerosene | .05¾ | .06¼ | .06 | .06¼ | .06 | .06¼ |
| 42-44 water white Kerosene | .06⅜ | .06½ | .06½ | | .06½ | .06⅝ |
| **NORTH LOUISIANA—** | | | | | | |
| 41-43 prime white Kerosene | .06¾ | .07 | .07¼ | | .07 | .07¼ |
| **NORTH TEXAS—** | | | | | | |
| 41-43 water white Kerosene | .05¾ | | .05¾ | .05⅞ | .05⅞ | |
| 40-42 water white Kerosene | .05½ | .05¾ | .05¾ | | .05¾ | |
| **ARKANSAS—** | | | | | | |
| 41-43 water white Kerosene | .06¼ | .06⅜ | .06¾ | | .06¾ | .07 |
| **PENNSYLVANIA—** | | | | | | |
| 43 Kerosene prime white | .07¼ | .07½ | .07½ | .07⅝ | .07½ | .07⅝ |
| 45 Kerosene water white | .07¼ | .07½ | .07¼ | .07½ | .07½ | .07⅝ |
| 46 Kerosene water white | .07⅝ | .07⅞ | .07⅝ | .08 | .07¾ | .08 |
| 47 Kerosene water white | .08 | .08¼ | .08 | .08¼ | .08 | .08¼ |
| 300 Mineral Seal | .07¼ | .07½ | .07¼ | .07½ | .07¼ | .07½ |
| **CALIFORNIA—** | | | | | | |
| 38-40 water white Kero. (high-burning test) | .06¾ | .07¼ | .06¾ | .07¼ | .06¾ | .07¼ |
| Engine distillate, 43-44, 445 endpoint | .07½ | .08 | .07½ | .08 | .07½ | .08 |
| Engine distillate, 42-44, 480 endpoint | .07 | .07½ | .07 | .07½ | .07 | .07½ |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 41-43 water white Kerosene | .05⅞ | .06⅛ | .06 | .06¼ | .06 | .06¼ |
| 42-44 water white Kerosene | .06½ | | .06½ | .06¾ | .06½ | .06¾ |

## FUEL OILS

| | Oct. 30 | | Oct. 23 | | Oct. 16 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| Below 18 Fuel Oil, per bbl. | .52½ | .55 | .55 | | .55 | |
| 18-22 Fuel Oil, per bbl. | .55 | .60 | .55 | .60 | .55 | .60 |
| 22-26 Fuel Oil, per bbl. | .57½ | .60 | .57½ | .60 | .57½ | .60 |
| 24-26 Fuel Oil, per bbl. | .60 | .65 | .60 | .65 | .60 | .65 |
| 26-30 Fuel Oil, per bbl. | .65 | .70 | .65 | .70 | .65 | .70 |
| 28-30 Fuel Oil, per bbl. | .77½ | .82½ | .77½ | .82½ | .77½ | .82½ |
| 32-36 Gas Oil (dark) | .02⅜ | .02½ | .02⅜ | .02½ | .02⅜ | .02½ |
| 32-36 Gas Oil (straw distillate) | .02½ | .02⅝ | .02½ | .02⅝ | .02½ | .02⅝ |
| 36-38 Distillate | .03 | .03¼ | .03 | .03¼ | .03 | .03¼ |
| 38-40 Straw Distillate | .03¼ | .03½ | .03¼ | .03½ | .03¼ | .03½ |
| **NORTH TEXAS—** | | | | | | |
| 24-26 Fuel Oil (sellers' cars) per bbl. | .52½ | .55 | .52½ | .55 | .52½ | .55 |
| 32-36 Gas Oil (straw) | .02¼ | .02⅜ | .02¼ | .02⅝ | .02¼ | .02⅝ |
| 38-40 Straw Distillate | .02⅞ | .03 | .02⅞ | .03 | .02⅞ | .03 |
| **NORTH LOUISIANA—** | | | | | | |
| 18-20 Fuel Oil, per bbl. | .70 | .80 | .75 | .80 | .70 | .80 |
| 32-36 Gas Oil | .03 | .03¼ | .03 | .03¼ | .03 | .03¼ |
| **ARKANSAS—** | | | | | | |
| 33-36 Distillate | .03¼ | .03½ | .03¼ | .03⅜ | .03¼ | .03⅜ |
| 32-36 Gas Oil (straw) | .03 | | .02¾ | .03 | .02¾ | .03 |
| 16-22 Refinery Fuel Oil, per bbl. | .70 | .75 | .70 | | .70 | |
| **GULF COAST (South Texas)—** | | | | | | |
| Gas Oil | .04 | .04½ | .04 | .04½ | .04 | .04½ |
| Bunker C Fuel, per bbl. | .80 | .90 | .80 | .90 | .80 | .90 |
| **PENNSYLVANIA—** | | | | | | |
| 30-34 Fuel Oil | .04½ | .04¼ | .04½ | .04¼ | .04½ | .04¼ |
| 36-40 Fuel Oil | .04¼ | .04½ | .04¼ | .04½ | .04¼ | .04½ |
| **CALIFORNIA—** | | | | | | |
| 33-36 Distillate | .03¾ | .04 | .03¾ | .04 | .03¾ | .04 |
| 27-32 Distillate | .03 | .03½ | .03 | .03½ | .03 | .03½ |
| *15-20 Fuel Oil, Bunker (at tide water) | .85 | 1.00 | .85 | 1.00 | .85 | 1.00 |
| 15-20 Fuel Oil (cargo lots), per bbl. | .75 | .85 | .75 | .85 | .75 | .85 |
| 27 plus Diesel, per bbl. | 1.15 | 1.19 | 1.15 | 1.19 | 1.15 | 1.19 |
| **CHICAGO DISTRICT (Based on Group 3)—** | | | | | | |
| 24-26 Fuel Oil, Group 3, bbl. | .62½ | .67½ | .62½ | .67½ | .65 | .67½ |
| 22-26 Fuel Oil, Group 3, bbl. | .60 | .65 | .60 | .65 | .62½ | .65 |
| 18-22 (Group 3), per bbl. | .55 | .60 | .55 | .60 | .52½ | .57½ |
| 16-20 Smackover, per bbl. | .85 | .87½ | .85 | .87½ | .85 | .87½ |
| 32-36 Gas Oil, zero | .02⅝ | .02⅞ | .02⅝ | .02⅞ | .02⅝ | .02⅞ |
| 32-36 Gas Oil (industrial) | .02⅜ | .02⅝ | .02⅜ | .02½ | .02⅜ | .02½ |
| 36-38 Distillate | .03⅛ | .03⅜ | .03⅛ | .03¼ | .03⅛ | .03¼ |
| 38-40 Straw Distillate | .03¼ | .03½ | .03¼ | .03⅜ | .03¼ | .03⅜ |

*Bunker.

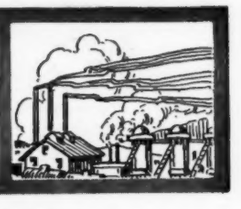
## LUBRICATING OIL AND WAX

| | Oct. 30 | | Oct. 23 | | Oct. 16 | |
|---|---|---|---|---|---|---|
| **OKLAHOMA (Group 3)—** | | | | | | |
| 100 vis., 2 color, 20-25 cold test | .06¼ | .06½ | .06¼ | .06½ | .06¼ | .06½ |
| 100 vis., 3 color, 20-25 cold test | .06 | .06¼ | .06 | .06¼ | .06 | .06¼ |
| 150 vis., 3 color, 20-25 cold test | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| 150 vis., 4 color, 20-25 cold test | .08 | .08¼ | .08 | .08¼ | .08 | .08¼ |
| 180 vis., 3 color, 23-28 cold test | .09⅜ | .10 | .09⅜ | .10 | .09⅜ | .10 |
| 180 vis., 4 color, 23-28 cold test | .09¼ | .09⅜ | .09¼ | .09⅜ | .09¼ | .09⅜ |
| 180 vis., 5 color, 23-28 cold test | .09⅛ | .09½ | .09⅛ | .09½ | .09⅛ | .09½ |
| 200 vis., 3 color, 23-28 cold test | .09½ | .10½ | .09½ | .10½ | .09½ | .10½ |
| 200 vis., 4 color, 23-28 cold test | .09⅜ | .10¼ | .09⅜ | .10¼ | .09⅜ | .10¼ |
| 200 vis., 5 color, 23-28 cold test | .09¼ | .10 | .09¼ | .10 | .09¼ | .10 |
| 240 vis., 3 color, 25-30 cold test | .13¾ | .14 | .13¾ | .14 | .13¾ | .14 |
| 240 vis., 4 color, 25-30 cold test | .13¼ | .13½ | .13¼ | .13½ | .13¼ | .13½ |
| 240 vis., 5 color, 25-30 cold test | .12¼ | .12½ | .12¼ | .12½ | .12¼ | .12½ |
| 280 vis., 3 color, 25-30 cold test | .15½ | .16 | .15½ | .16 | .15½ | .16 |
| 280 vis., 4 color, 25-30 cold test | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| 280 vis., 5 color, 25-30 cold test | .14 | .14½ | .14 | .14½ | .14 | .14½ |
| Cylinder Stocks: | | | | | | |
| 600, steam refined, light green | .08 | .09 | .08 | .09 | .08 | .09 |
| 600, steam refined, dark green | .06 | .06½ | .06 | .06½ | .06 | .06½ |
| 190-200 vis. @ 210 Bright Stock | .29 | .30 | .29 | .30 | .29 | .30 |
| 150-160 vis. @ 210 Bright Stock | .25 | | .25 | | .25 | |
| Waxes: | | | | | | |
| 124-126 White Crude Scale Wax | .05 | .05⅛ | .05 | .05⅛ | .05 | .05⅛ |
| **PENNSYLVANIA—** | | | | | | |
| 34 Neutral | .07½ | .07¾ | .07½ | .07¾ | .07½ | .07¾ |
| 34 Sundebloom | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| 36 Miners' Neutral | .07 | .07½ | .07 | .07½ | .07 | .07½ |
| 150, 3 color | .21½ | .22 | .21½ | .22 | .21½ | .22 |
| 180, 3 color | .25½ | .26 | .25½ | .26 | .25½ | .26 |
| 200, 3 color | .28½ | .29 | .28½ | .29 | .28½ | .29 |
| 220, 3 color | .31½ | .32 | .31½ | .32 | .31½ | .32 |
| 600, steam refined | .14 | .14½ | .13¾ | .14 | .13½ | .13¾ |
| 635, steam refined | .15½ | .16 | .14½ | .14¾ | .13½ | .14 |
| 650, steam refined | .17½ | .18½ | .15¼ | .15½ | .15 | .15¼ |
| 600, Pennsylvania flash | .21½ | .22 | .19 | .19½ | .19 | .19½ |
| *550, E filtered | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| *600, E filtered | .19 | .19½ | .19 | .19½ | .19 | .19½ |
| 600, E filtered | .17 | .17½ | .18 | .18½ | .18 | .18½ |
| 600, D filtered | .23¾ | .24 | .23¾ | .24 | .23¾ | .24 |
| 550, E filtered | .15½ | .16 | .15½ | .16 | .15½ | .16 |
| 550, D filtered | .21½ | .22 | .21½ | .22 | .21½ | .22 |
| Pennsylvania Bright Stock | .33 | .34 | .35½ | .36 | .35½ | .36 |
| †122-124 White Crude Scale Wax | .05¼ | .05¾ | .05¼ | .05¾ | .05¾ | .05½ |
| †124-126 White Crude Scale Wax | .05⅜ | .05½ | .05⅜ | .05½ | .05⅜ | .05½ |
| **GULF COAST (South Texas)—** | | | | | | |
| No. 2 color, 100 vis., pale oil | .07¼ | .07½ | .07¼ | .07½ | .07¼ | .07½ |
| No. 3 color, 200 vis., pale oil | .08½ | .09 | .08½ | .09 | .08½ | .09 |
| No. 3 color, 300 vis., pale oil | .11 | .11½ | .11 | .11½ | .11 | .11½ |
| No. 3½ color, 500 vis., pale oil | .12½ | .13 | .12½ | .13 | .12½ | .13 |
| No. 4 color, 750 vis., pale oil | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| No. 5 to 6 color, 200 vis., red oil | .08¼ | .08½ | .08¼ | .08½ | .08¼ | .08½ |
| No. 5 to 6 color, 300 vis., red oil | .09¼ | .09½ | .09¼ | .09½ | .09¼ | .09½ |
| No. 5 to 6 color, 500 vis., red oil | .10½ | .11½ | .10½ | .11½ | .10½ | .11½ |
| No. 5 to 6 color, 750 vis., red oil | .13¼ | .14 | .13¼ | .14 | .13¼ | .14 |
| No. 2½ color, 200 vis., pale filtered | .11¾ | .12¼ | .11¾ | .12¼ | .11¾ | .12¼ |
| No. 2½ color, 300 vis., pale filtered | .13½ | | .13½ | | .13½ | |
| No. 2½ color, 500 vis., pale filtered | .15½ | .16 | .15½ | .16 | .15½ | .16 |
| No. 2½-3 color, 750 vis., pale filtered | .18 | .20 | .18 | .20 | .18 | .20 |
| **CALIFORNIA—** | | | | | | |
| 130 vis., 2½-3 color | .10¼ | .11 | .10¼ | .11 | .10¼ | .11 |
| 200 vis., 2½-3 color | .11½ | .12 | .11½ | .12 | .11½ | .12 |
| 300 vis., 3-3½ color | .13 | .13½ | .13 | .13½ | .13 | .13½ |

*At Warren, Pa. †At New York.

# REFINERY AND CRUDE PRICES

**Quotations on refined products are for interstate or export movement unless otherwise noted.**



| | | | | | | |
|---|---|---|---|---|---|---|
| 350 vis., 3½-4 color | .13½ | .14 | .13¼ | .14 | .13¼ | .14 |
| 400 vis., 3½-4 color | .15 | .16 | .15 | .16 | .15 | .16 |
| Red Neutral: | | | | | | |
| 200 vis., 4½-5 color | .11½ | .11¾ | .11½ | .11¾ | .11½ | .11¾ |
| 300 vis., 5-6 color | .11¾ | .12½ | .11¾ | .12½ | .11¾ | .12¾ |
| 400 vis., 5-6 color | .13½ | .14½ | .13½ | .14½ | .13½ | .14½ |
| 500 vis., 4½-5 color | .15 | .15½ | .15 | .15½ | .15 | .15½ |
| 500 vis., 5-6½ color | .15¼ | .15¾ | .15¼ | .15¾ | .15¼ | .15¾ |
| 600 vis., 6½ plus color | .15½ | .16 | .15½ | .16 | .15½ | .16 |

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

## NEW YORK (BAYONNE) REFINERY PRICES

| | Oct. 30 | Oct. 23 | Oct. 16 |
|---|---|---|---|
| Gasoline, U. S. Motor, 58-60 437 | .11¼ | .11¼ | .11¼ |
| Kerosene, water white, 41-43 | .09 | .09 | .09 |
| *Fuel Oil, Bunker "C," 14-16, per bl. | 1.05 | 1.05 | 1.05 |
| †Fuel Oil, Diesel, 28-30, per bbl. | 2.00 | 2.00 | 2.00 |
| Gas Oil, 32-36 gravity | .05¼ | .05¼ | .05¼ |
| 25 pale Paraffin Oil | .11¾ | .11¾ | .11¾ |
| 28 pale Paraffin Oil | .07 | .07 | .07 |
| 285 red Paraffin Oil | .11½ | .11½ | .11½ |
| 250 red Paraffin Oil | .10½ | .10½ | .10½ |
| 225 red Paraffin Oil | .09½ | .09½ | .09½ |
| 200 red Paraffin Oil | .09 | .09 | .09 |
| Refined Wax: | | | |
| 120-122 a.m.p., per lb. | .05⅝ | .05½ | .05½ |
| 125-127 a.m.p., per lb. | .05⅞ | .05¾ | .05¾ |
| 130-132 a.m.p., per lb. | .06⅛ | .06½ | .06½ |
| 133-135 a.m.p., per lb. | .07⅜ | .07¼ | .07¼ |
| 135-137 a.m.p., per lb. | .07¾ | .07¾ | .07¾ |
| Petrolatum, in bbls., carload lots, per lb.: | | | |
| Dark green | .02 | .02 | .02 |
| Amber | .03½ | .03½ | .03½ |
| Extra amber | .03¾ | .03¾ | .03¾ |
| Cream | .06¼ | .06¼ | .06¼ |
| Lily white | .07¼ | .07¼ | .07¼ |
| Snow white | .08¼ | .08¼ | .08¼ |

*Lighterage, 5.0c a barrel extra. †Lighterage, 6.5c a barrel extra.

## NEW YORK (BAYONNE) EXPORT PRICES

| | Oct. 30 | Oct. 23 | Oct. 16 |
|---|---|---|---|
| Gasoline, U. S. Motor, 58-60 437, in cases | .2640 | .2640 | .2690 |
| Kerosene, standard white, in cases | .1765 | .1765 | .1765 |
| Kerosene, water white, in cases | .1890 | .1890 | .1890 |
| 600, steam refined cylinder stocks, in bbls. | .20 | .20 | .20 |
| 635, steam refined | .21 | .21 | .21 |
| 650, steam refined | .23 | .23 | .23 |
| 600, Pennsylvania flash | .26 | .26 | .26 |
| 630, Pennsylvania flash | .34½ | .34½ | .34½ |
| 600, Warren E | .25½ | .25½ | .25½ |
| 600, Oil City E | .24½ | .24½ | .24½ |
| Light 140-150 Bright Stock | .42½ | .43½ | .43½ |
| Dark 140-150 Bright Stock | .40½ | .41½ | .41½ |

## LOS ANGELES EXPORT PRICES

| | Oct. 30 | | Oct. 23 | | Oct. 16 | |
|---|---|---|---|---|---|---|
| Kerosene, water white | .05¼ | .06¼ | .05¼ | .06¼ | .05¼ | .06¼ |
| U. S. Motor Gasoline, 53-55, 437 e.p. | .08¼ | .09 | .08½ | .09 | .08½ | .09 |

## CALIFORNIA CRUDE OIL PRICES

**Standard Oil Co.-Union Oil Co. (Effective August 15, 1928)***

| Gravity— | Richfield Torrance Olinda-Brea Alamitos Hts. Signal Hill Seal Beach Huntington Beach Athens-Rosecrans-Dom'gues Inglewood 1 | Whittier †La Habra Coyote Hills 2 | †Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge Buena Vista Hills 3 | Montebello 4 | Santa Fe Springs 5 | Coalinga 6 | Wheeler Ridge 7 | Orcutt 8 | Ventura 9 |
|---|---|---|---|---|---|---|---|---|---|
| 14 to 14.9 | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 | .85 |
| 15 to 15.9 | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 | .85 |
| 16 to 16.9 | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 | .85 |
| 17 to 17.9 | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 | .85 |
| 18 to 18.9 | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 | .85 |
| 19 to 19.9 | .85 | .85 | .75 | .85 | .... | .75 | .75 | .85 | .85 |
| 20 to 20.9 | .85 | .85 | .77 | .86 | .... | .77 | .77 | .85 | .85 |
| 21 to 21.9 | .89 | .88 | .79 | .89 | .89 | .79 | .79 | .86 | .86 |
| 22 to 22.9 | .93 | .91 | .82 | .92 | .92 | .82 | .82 | .87 | .87 |
| 23 to 23.9 | .97 | .94 | .86 | .95 | .95 | .85 | .85 | .90 | .90 |
| 24 to 24.9 | 1.01 | .97 | .90 | .98 | .98 | .88 | .88 | .93 | .94 |
| 25 to 25.9 | 1.05 | 1.00 | .95 | 1.01 | 1.01 | .91 | .91 | .95 | .98 |
| 26 to 26.9 | 1.09 | 1.04 | 1.00 | 1.04 | 1.04 | .94 | .94 | .97 | 1.02 |
| 27 to 27.9 | 1.13 | 1.08 | 1.05 | 1.07 | 1.07 | .98 | .97 | .... | 1.06 |
| 28 to 28.9 | 1.17 | 1.12 | 1.10 | 1.10 | 1.10 | 1.02 | .... | .... | 1.10 |
| 29 to 29.9 | 1.21 | 1.16 | 1.13 | 1.15 | 1.06 | .... | .... | .... | 1.14 |
| 30 to 30.9 | 1.25 | 1.20 | 1.22 | 1.16 | 1.20 | 1.10 | .... | .... | 1.18 |
| 31 to 31.9 | 1.30 | .... | 1.28 | .... | 1.25 | 1.14 | .... | .... | 1.22 |
| 32 to 32.9 | 1.35 | .... | 1.34 | .... | 1.30 | 1.18 | .... | .... | 1.28 |
| 33 to 33.9 | 1.41 | .... | 1.40 | .... | 1.35 | 1.22 | .... | .... | .... |
| 34 to 34.9 | 1.47 | .... | 1.46 | .... | 1.40 | 1.26 | .... | .... | .... |
| 35 to 35.9 | 1.53 | .... | .... | .... | 1.45 | 1.30 | .... | .... | .... |
| 36 to 36.9 | 1.59 | .... | .... | .... | 1.50 | .... | .... | .... | .... |
| 37 to 37.9 | 1.65 | .... | .... | .... | 1.55 | .... | .... | .... | .... |
| 38 to 38.9 | 1.71 | .... | .... | .... | 1.60 | .... | .... | .... | .... |
| 39 to 39.9 | 1.77 | .... | .... | .... | 1.65 | .... | .... | .... | .... |
| 40 to 40.9 | 1.83 | .... | .... | .... | .... | .... | .... | .... | .... |
| 41 to 41.9 | 1.89 | .... | .... | .... | .... | .... | .... | .... | .... |
| 42 to 42.9 | 1.95 | .... | .... | .... | .... | .... | .... | .... | .... |

*Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity. Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 14 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 14 to 33.9 gravity; Lost Hills, 14 to 34.9 gravity.

Columns 8 and 9 posted by Union Oil Co. only.

†On October 2 Standard Oil Co. of California discontinued contracting for purchase of Kern River crude and on October 20 established following prices on grades below 14 gravity—11 to 11.9 degrees at 45 cents, 12 to 19 degrees at 50 cents.

## CRUDE OIL GRAVITY TABLE

| Gravity— | Okla., Kans., N. C. Tex. 1 | No. La. and Arkansas 2 | Smackover, Ark. 3 | Stephens, Ark. 4 | Gray County (Texas Panhandle) 5 | Salt Creek, Wyo. 6 | Grade B & Light Crude (S. Coast) 7 | Somerset (South Central Texas) 8 |
|---|---|---|---|---|---|---|---|---|
| 24 and above | .... | .... | .90 | .... | .... | .... | .... | .... |
| Below 24 | .... | .... | .75 | .... | .... | .... | .... | .... |
| Below 25 | .60 | .... | .... | .... | .... | .... | 1.16 | .... |
| 25 to 25.9 | .67 | .... | .... | .... | .... | .... | .... | .... |
| Below 26 | .... | .... | .... | .... | .... | .... | .... | .... |
| 26 to 26.9 | .74 | .... | .... | .... | .... | .... | 1.19 | .... |
| 27 to 27.9 | .81 | .... | .... | .... | .... | .... | 1.21 | .... |
| Below 28 | .... | .81 | .... | .75 | .68 | .... | .... | .... |
| 28 to 28.9 | .88 | .88 | .... | .77 | .68 | .... | 1.23 | .... |
| 29 to 29.9 | .95 | .95 | .... | .79 | .75 | .95 | 1.25 | .... |
| 30 to 30.9 | 1.02 | 1.02 | .... | .81 | .82 | 1.02 | 1.27 | .... |
| 31 to 31.9 | 1.09 | 1.09 | .... | .83 | .89 | 1.09 | 1.29 | .... |
| 32 to 32.9 | 1.16 | 1.16 | .... | .85 | .96 | 1.16 | 1.31 | 1.05 |
| 33 to 33.9 | 1.21 | 1.21 | .... | .... | 1.01 | 1.21 | 1.33 | 1.07 |
| 34 to 34.9 | 1.26 | 1.26 | .... | .... | 1.06 | 1.26 | 1.35 | 1.09 |
| 35 to 35.9 | 1.31 | 1.31 | .... | .... | 1.11 | 1.31 | 1.37 | 1.11 |
| 36 to 36.9 | 1.36 | 1.36 | .... | .... | 1.16 | 1.36 | .... | 1.13 |
| 37 to 37.9 | 1.41 | 1.41 | .... | .... | 1.21 | 1.41 | .... | 1.15 |
| 38 to 38.9 | 1.46 | 1.46 | .... | .... | 1.26 | .... | .... | 1.17 |
| 39 to 39.9 | 1.51 | 1.51 | .... | .... | 1.31 | .... | .... | .... |
| 40 to 40.9 | 1.56 | 1.56 | .... | .... | 1.36 | .... | .... | .... |
| 41 to 41.9 | 1.61 | 1.61 | .... | .... | 1.41 | .... | .... | .... |
| 42 to 42.9 | 1.66 | 1.66 | .... | .... | 1.46 | .... | .... | .... |
| 43 to 43.9 | 1.71 | 1.71 | .... | .... | 1.51 | .... | .... | .... |
| 44 and above | 1.76 | 1.76 | .... | .... | 1.56 | .... | .... | .... |

Column 1—Magnolia Petroleum Co. posted schedule August 2, 1928, making price below 25 gravity 60 cents per barrel, 25-25.9 gravity 67 cents, 26-26.9 gravity 74 cents, and 27-27.9 gravity 75 cents, 30-30.9, 90 cents, and 31-31.9, $1.05, with balance of the price schedule as shown.

Oklahoma—Prairie Oil & Gas Co., Sinclair Oil & Gas Co., Gypsy Oil Co., Carter Oil Co., The Texas Company, July 26.

North Central Texas—[Including Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs (Southwest Texas, Iatan and Panola (Iatan posted at flat price of 93 cents by Magnolia on January 14, 1928).] Currie, Nocona and Moran. Prairie, Sinclair and Gulf; The Texas Company, Humble Oil & Refining Co., July 26.

Kansas—Prairie, Sinclair; Carter, The Texas Company, July 26.

Column 2—Arkansas and North Louisiana—[Caddo, Bull Bayou, Crichton, De Soto, Haynesville, Homer and El Dorado only], Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., and Gulf Refining Co., August 2. Magnolia Petroleum Co. schedule effective August 7 applies to Pine Island, Haynesville, Bull Bayou, Louisiana, and El Dorado, Ark., light crude. The Texas Company August 8 posted prices below 28 gravity at 7 cents differential per degree with minimum of 60 cents for all below 25 gravity.

Column 3—February 6, Louisiana Oil Refining Co. February 7, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co. February 8, and on February 10, Atlantic Production Co.

Column 4—Atlantic Oil Producing Co., Louisiana Oil Refining Corp., August 3.

Column 5—Humble Oil & Refining Co., July 26.

Column 6—Midwest Refining Co., July 26. All crude over 37 gravity, $1.41 per barrel.

Column 7—Humble Oil & Refining Co. and other major buyers (schedule ends 35 and above), March 14, with exception of Magnolia Petroleum Co., which stops at 31 degrees gravity. Sun Pipe Line Co. and The Texas Company posted 2 cents differential for each degree above 35 gravity and $1.47 for 40 gravity and above.

Column 8—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

## CRUDE OIL PRICES

**OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS**

Corsicana heavy (March 14, 1927)*....$1.00
Other fields.....See gravity table

*Posted by Magnolia Petroleum Co.

**TEXAS PANHANDLE**
**Carson and Hutchinson**

| | |
|---|---|
| Below 32 gravity | $ .69 |
| 32-32.9 | .76 |
| 33-33.9 | .81 |
| 34-34.9 | .86 |
| 35-35.9 | .91 |
| 36-36.9 | .96 |
| 37-37.9 | 1.01 |
| 38-38.9 | 1.06 |
| 39-39.9 | 1.11 |
| 40-40.9 | 1.16 |
| 41-41.9 | 1.21 |
| 42-42.9 | 1.26 |
| 43-43.9 | 1.31 |
| 44 and above | 1.36 |

**Wheeler County**

| | |
|---|---|
| Below 30 gravity | $ .65 |
| 30-30.9 | .72 |
| 31-31.9 | .79 |
| 32-32.9 | .86 |
| 33-33.9 | .91 |
| 34-34.9 | .96 |
| 35-35.9 | 1.01 |
| 36-36.9 | 1.06 |
| 37-37.9 | 1.11 |
| 38-38.9 | 1.16 |
| 39-39.9 | 1.21 |
| 40-40.9 | 1.26 |
| 41-41.9 | 1.31 |
| 42-42.9 | 1.36 |
| 43-43.9 | 1.41 |
| 44 and above | 1.46 |
| Gray County.....See gravity table | |

Humble Oil & Refining Co. and Magnolia Petroleum Co., July 26.

Iatan*.....Same as North Texas
Crane-Upton-Crockett, Pecos, Winkler and Glasscock (July 26)‡.....$ .65
Chalk†.....80

*Includes Howard County and Westbrook Fields, Marland Refining Co. pays $1.05 for Howard County crude, effective May 21.

†Magnolia Petroleum Co., January 14, 1928.

‡Posted by Humble Oil & Refining Co., Magnolia Petroleum Co. and Gulf Pipe Line Co.

**ARKANSAS-NORTH LOUISIANA**

Cotton Valley (Below 36 gravity April 11).....$ .75
Bellevue (Feb. 27, 1927).....1.25
Urania (Oct. 16, 1928).....90
East El Dorado (March 16, 1927).....1.00
Other fields.....See gravity table

*Cotton Valley crude above 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Cotton Valley and Bellevue, Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Refining Co. and Magnolia Petroleum Co.; (Magnolia Petroleum Co. posted Cotton Valley February 8); Urania, Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co., Gulf Refining Co.

**GULF COAST**

(Goose Creek, Hull, Liberty, West Columbia, Orange, Boling, Sour Lake, Humble, Sugarland, Raccoon Bend, High Island, Pierce Junction and Spindletop.)

Grade A (March 14)*.....$1.20
Grade B.....See gravity table
Jennings, La. (March 14)†.....$1.05
Saratoga, Batson, Daytona (March 14, 1927)‡.....1.20
Markham (March 14)‖.....1.00

*Humble Oil & Refining Co. and other major buyers. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. ‖The Texas Company.

**SOUTH CENTRAL AND SOUTH-WESTERN TEXAS**

Luling (May 5)*.....$1.00
Mirando (March 14)†.....1.00
Rockdale-Minerva (April 15):
Below 38 gravity.....1.26
38-38.9 gravity.....1.27
39-39.9 gravity.....1.29
40 and above.....1.31
Thrall‡.....
Callihan (May 15).....1.75
Lytton Springs (Lockhart).See gravity table
Somerset.....See gravity table

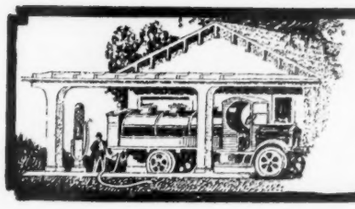
*Posted by Magnolia Petroleum. Thrall prices same as North Central Texas less 19½ cents per cwt. freight.

†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.

**ROCKY MOUNTAIN STATES**
**Ohio Oil Co.-Midwest Refining Co.**
(Effective July 27, 1928)

Rock Creek, Wyo.....$1.33
Salt Creek.....See gravity table

(Continued on Page 126)



# TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Oct. 30.

## ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

### STANDARD OIL CO. (INDIANA)

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Chicago dist. | 15.0 | 17.0 | ... | 12.0 |
| Decatur, Ill. | 15.2 | 17.2 | ... | 12.1 |
| East St. Louis | 14.4 | 16.4 | ... | 11.2 |
| Joliet | 15.4 | 17.4 | ... | 12.3 |
| Peoria | 15.2 | 17.2 | ... | 12.1 |
| Quincy | 15.2 | 17.2 | ... | 11.9 |
| Davenport, Ia. | 18.5 | 20.5 | 3.0 | 12.3 |
| Des Moines | 18.5 | 20.5 | 3.0 | 12.3 |
| Keokuk | 18.5 | 20.5 | 3.0 | 12.3 |
| Sioux City | 18.1 | 20.1 | 3.0 | 11.9 |
| Duluth, Minn. | 18.5 | 20.5 | 2.0 | 12.9 |
| Mankato | 18.1 | 20.1 | 2.0 | 12.7 |
| Minneapolis | 18.2 | 20.2 | 2.0 | 12.8 |
| La Crosse, Wis. | 18.2 | 20.2 | 2.0 | 13.0 |
| Milwaukee | 17.1 | 19.1 | 2.0 | 11.9 |
| Madison | 17.3 | 17.3 | 2.0 | 12.1 |
| Detroit, Mich. | 18.8 | 20.8 | 3.0 | 13.7 |
| Grand Rapids | 18.7 | 20.7 | 3.0 | 13.6 |
| Saginaw | 18.9 | 20.9 | 3.0 | 13.8 |
| Evansville, Ind. | 18.0 | 20.0 | 3.0 | 13.0 |
| Fort Wayne | 18.4 | 20.4 | 3.0 | 13.4 |
| Indianapolis | 18.2 | 20.2 | 3.0 | 13.2 |
| South Bend | 18.4 | 20.4 | 3.0 | 13.4 |
| Fargo, N. D. | 19.9 | 21.9 | 2.0 | 14.9 |
| Huron, S. D. | 20.3 | 22.3 | 4.0 | 13.7 |
| Sioux Falls | 19.1 | 21.1 | 4.0 | 13.4 |
| K. C., Mo.* | 17.9 | 19.9 | 3.0 | 10.6 |
| Springfield* | 17.8 | 19.8 | 3.0 | 11.5 |
| St. Louis* | 16.9 | 18.9 | 2.5 | 11.3 |
| St. Joseph* | 17.5 | 19.5 | 3.0 | 11.2 |
| Wichita, Kans. | 15.8 | 17.8 | 2.0 | 10.8 |
| Bartlesville, Ok. | 16.5 | 18.5 | 3.0 | 10.5 |

*State tax 2 cents; remainder city tax.

### NAPHTHA

| | Tank wagon | Tank car |
|---|---|---|
| Oleum spirits | 14.7 | 12.9 |
| V. M. & P. naphtha | 16.2 | 13.9 |
| Cleaner's naphtha | 18.0 | 14.9 |
| Stanisol | 19.0 | 15.4 |

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

### STANOLIND FURNACE OIL IN CHICAGO

| | |
|---|---|
| Less than 100 gallons | 9.0 |
| 100 to 799 gallons | 8.0 |
| 800 or more gallons | 7.5 |

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline: 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month, and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

### SOUTHWESTERN DISTRICT

**Magnolia Petroleum Co.**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Dallas, Tex. | 16.0 | 20.0 | 2.0 | 12.0 |
| Fort Worth | 16.0 | 19.0 | 2.0 | 12.0 |
| Houston | 16.0 | 20.0 | 2.0 | 15.0 |
| San Antonio | 14.0 | 17.0 | 2.0 | 11.0 |
| El Paso | 17.0 | 20.0 | 2.0 | 16.0 |
| Texarkana | 16.5 | 20.5 | 2.0 | 13.0 |
| Muskogee, Ok. | 18.0 | 20.0 | 3.0 | 12.0 |
| Okla. City | 18.0 | 20.0 | 3.0 | 12.0 |
| Tulsa | 17.0 | 19.0 | 3.0 | 10.0 |
| Ft. Smith, Ark. | 18.0 | 20.0 | 3.0 | 14.0 |
| Little Rock | 21.0 | 23.0 | 5.0 | 14.0 |

### NEBRASKA

**Standard Oil Co. (Nebraska)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Omaha | 17.25 | 19.25 | 2.0 | 12.25 |
| McCook | 18.75 | 20.75 | 2.0 | 13.75 |
| Norfolk | 17.75 | 19.75 | 2.0 | 12.75 |
| N. Platte | 18.75 | 20.50 | 2.0 | 13.50 |
| Scotsbluff | 18.75 | 20.75 | 2.0 | 13.25 |

### ROCKY MOUNTAIN DISTRICT

**Continental Oil Co.**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Denver, Colo. | 19.0 | 22.0 | 3.0 | 14.5 |
| Pueblo | 19.0 | 22.0 | 3.0 | 14.5 |
| Grand Junction | 22.5 | 25.5 | 3.0 | 18.0 |
| Casper, Wyo. | 19.0 | 22.0 | 3.0 | 13.0 |
| Cheyenne | 20.0 | 23.0 | 3.0 | 14.5 |
| Butte, Mont. | 23.5 | 26.5 | 3.0 | 19.0 |
| Helena | 23.5 | 26.5 | 3.0 | 19.0 |
| Salt Lake, Utah | 22.0 | 25.0 | 3.5 | 17.0 |
| Albu'que, N. M. | 22.0 | 25.0 | 5.0 | 17.0 |
| Boise, Idaho | 24.5 | 27.5 | 4.0 | 19.0 |
| Twin Falls | 24.5 | 27.5 | 4.0 | 19.0 |

### SOUTHERN DISTRICT

**Standard Oil Co. (Kentucky)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Atlanta, Ga. | 22.0 | 24.0 | 4.0 | 16.5 |
| Augusta | 22.0 | 24.0 | 4.0 | 15.5 |
| Macon | 22.0 | 24.0 | 4.0 | 16.5 |
| Savannah | 21.0 | 21.0 | 4.0 | 14.5 |
| Birm'ham, Ala. | 20.0 | 22.0 | 4.0 | 14.0 |
| Mobile | 22.0 | 24.0 | 4.0 | 15.0 |
| Montgomery | 21.0 | 22.0 | 4.0 | 16.5 |
| Clarks'le, Miss. | 21.0 | 23.0 | 4.0 | 13.0 |
| Jackson | 19.0 | 21.0 | 4.0 | 14.5 |
| Natchez | 20.5 | 22.5 | 4.0 | 14.0 |
| Gulfport | 22.5 | 24.5 | 4.0 | 14.0 |
| Vicksburg | 20.5 | 22.5 | 4.0 | 14.0 |
| Jack'ville, Fla.* | 22.0 | 24.0 | 5.0 | 13.5 |
| Miami* | 23.0 | 25.0 | 5.0 | 15.5 |
| Pensacola* | 24.0 | 24.0 | 5.0 | 13.5 |
| Tampa* | 22.0 | 24.0 | 5.0 | 13.5 |
| Lexington, Ky. | 21.0 | 23.0 | 5.0 | 15.5 |
| Covington | 22.0 | 22.0 | 5.0 | 15.5 |
| Louisville | 21.0 | 23.0 | 5.0 | 15.0 |

*Note—Florida station prices have been 2 cents above tank wagon prices in respective points since July 30 as shown above.

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene only. Pensacola tax includes 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

### ATLANTIC COAST DISTRICT

**Standard Oil Co. (New Jersey)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Atlantic City | 18.0 | 20.0 | 2.0 | 14.0 |
| Newark, N. J. | 18.0 | 20.0 | 2.0 | 14.0 |
| Annapolis, Md. | 21.0 | 23.0 | 4.0 | 14.0 |
| Baltimore | 21.0 | 23.0 | 4.0 | 11.0 |
| Cumberland | 21.0 | 23.0 | 4.0 | 14.0 |
| Washington | 19.0 | 21.0 | 2.0 | 14.0 |
| Danville, Va. | 22.0 | .... | 5.0 | 14.0 |
| Norfolk | 19.0 | 20.0 | 5.0 | 14.0 |
| Petersburg | 22.0 | 24.0 | 5.0 | 14.0 |
| Roanoke | 22.0 | 24.0 | 5.0 | 14.0 |
| Richmond | 22.0 | 24.0 | 5.0 | 14.0 |
| Ch'rist'n, W. V. | 21.0 | 23.0 | 4.0 | 14.0 |
| Keyser | 21.0 | 23.0 | 4.0 | 14.0 |
| Parkersburg | 21.0 | 23.0 | 4.0 | 14.0 |
| Wheeling | 21.0 | 23.0 | 4.0 | 14.0 |
| Charlotte, N. C. | 21.0 | 23.0 | 4.0 | 14.0 |
| Hickory | 21.0 | 23.0 | 4.0 | 14.0 |
| Mt. Airy | 21.0 | 23.0 | 4.0 | 14.0 |
| Salisbury | 21.0 | 23.0 | 4.0 | 14.0 |
| Charleston, S. C. | 22.0 | 24.0 | 5.0 | 14.0 |
| Columbia | 22.0 | 24.0 | 5.0 | 14.0 |

### NEW YORK AND PART OF NEW ENGLAND DISTRICT

**Standard Oil Co. (New York)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Albany, N. Y. | 18.0 | 20.0 | ... | 15.0 |
| New York* | 18.0 | 20.0 | ... | 15.0 |
| Buffalo | 18.0 | 20.0 | ... | 14.0 |
| Rochester | 18.0 | 20.0 | ... | 14.0 |
| Syracuse | 18.0 | 20.0 | ... | 15.0 |
| Boston, Mass | 18.0 | 20.0 | ... | 15.0 |
| Augusta, Me. | 22.0 | 24.0 | 4.0 | 15.0 |
| Manch't'r, N. H. | 22.0 | 24.0 | 4.0 | 15.0 |
| Burlington, Vt. | 21.0 | 23.0 | 3.0 | 15.0 |

*Prices in steel barrels.

### CENTRAL SOUTH DISTRICT

**Standard Oil Co. (Louisiana)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| N. Orleans, La.* | 15.5 | 17.5 | 3.0 | 16.0 |
| Baton Rouge | 16.0 | 18.0 | 2.0 | 14.5 |
| Alexandria | 17.0 | 19.0 | 2.0 | 16.0 |
| LaFayette | 17.0 | 19.0 | 2.0 | 15.5 |
| Lake Charles | 17.5 | 19.5 | 2.0 | 16.0 |
| Shreveport | 17 5 | 17 5 | 2 0 | 15 0 |
| Knoxv'le, Tenn. | 21.0 | 21.0 | 3.0 | 16.0 |
| Memphis | 19.0 | 21.0 | 3.0 | 15.0 |
| Chattanooga | 20.5 | 22.5 | 3.0 | 16.0 |
| Nashville | 20.0 | 22.0 | 3.0 | 16.0 |
| Bristol | 21.0 | 23.0 | 3.0 | 15.0 |
| Lit. Rock, Ark. | 21.0 | 23.0 | 5.0 | 14.0 |

*Tax of 3 cents includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax and 1-cent parish tax.

### PACIFIC COAST TERRITORY

**Standard Oil Co. (California)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| San Francisco | 17.0 | 21.0 | 3.0 | 15.5 |
| Los Angeles | 16.5 | 20.5 | 3.0 | 15.5 |
| Reno, Nev. | 22.0 | 26.0 | 4.0 | 19.0 |
| Portland, Ore. | 17.5 | 21.5 | 3.0 | 16.5 |
| Seattle, Wash. | 16.5 | 20.5 | 2.0 | 16.5 |
| Tacoma | 16.5 | 20.5 | 2.0 | 16.5 |
| Spokane | 20.5 | 24.5 | 2.0 | 20.5 |
| Phoenix, Ariz. | 18.0 | 22.0 | 4.0 | 20.5 |

### PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

**The Atlantic Refining Co.**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| Pittsburgh, Pa. | 17.0 | *22.0 | ... | 15.0 |
| Philadelphia | 17.0 | *22.0 | ... | 15.0 |
| Scranton | 17.0 | *22.0 | ... | 15.0 |
| Allentown | 17.0 | *22.0 | ... | 15.0 |
| Altoona | 17.0 | *22.0 | ... | 15.0 |
| Erie | 17.0 | *22.0 | ... | 15.0 |
| Dover, Del. | 20.0 | 22.0 | 3.0 | 15.0 |
| Wilmington | 20.0 | 22.0 | 3.0 | 15.0 |
| Springf'd, Mass. | 18.0 | 20.0 | ... | 15.0 |
| Worcester | 18.0 | 20.0 | ... | 15.0 |
| Boston | 18.0 | 20.0 | ... | 15.0 |
| Providence, R. I. | 20.0 | 22.0 | 2.0 | 15.0 |
| Hartford, Conn. | 20.0 | 22.0 | 2.0 | 14.0 |
| New Haven | 20.0 | 22.0 | 2.0 | 15.0 |

*Includes tax of 3.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State.

### OHIO

**Standard Oil Co. (Ohio)**

| | Gasoline | | | Kero. |
|---|---|---|---|---|
| | Tank wagon | Service station | Incl'ds tax of | tank wagon |
| All Ohio points. | 19.0 | 20.0 | 3.0 | 14.5 |

### TANK WAGON CHANGES

October 21—Standard Oil Co. of Indiana reduced the gasoline station price 2 cents in Madison, Wis., to 17.3 cents.

October 29—Standard Oil Co. of Louisiana reduced the gasoline station price 2 cents in Shreveport, La., to 17.5 cents.

## Shell Builds Roads to Develop Market in Backward Greece

At the present moment there are lying idle in Greece about 14,500 square kilometers of richly fertile land, but owing to lack of adequate means of communication between productive areas and centers of consumption only about 11.35 per cent of the country is under cultivation. The result, says the Petroleum Times of London, is that while with a population of 6,200,000 Greece is essentially an agricultural country, it is necessary to import $55,000,000 worth of foodstuff annually, while large quantities of home-grown products are allowed to rot every year. Foreign powers have already interested themselves in the settlement of 2,000,000 penniless refugees, but it is apparent that this settlement cannot be completed until such time as the country is opened up for agricultural production.

Extension of the existing railways is out of the question on account of the mountainous state of the country and resultant high initial costs, and owing to the most inadequate system of roads now existing, efforts have been made over the past four years to bring about national realization of the necessity for a network of sound, modern roads. These have culminated in a contract being signed between the Greek government and the P. G. Macris Trading & Industrial Co., Ltd., whereby the following works are to be executed in five years (approximately): 1,260 kilometers of new roads paved with asphalt; 3,500 kilometers improved roads paved with asphalt, and 6,500 kilometers macadam roads asphalt surfaced.

The scheme is divided into two sections (a) to link up main provincial towns which are centers of agricultural production with ports and centers of consumption, and (b) to join up surrounding secondary towns with provincial towns and extend such roads to areas available for cultivation but at present lying idle.

Concessionnaires already have undertaken the execution of this contract in conjunction with the Shell Co. (Hellas), Ltd., of London, whose agents they are for the whole of Greece. The "Shell" method of construction, involving the use of "Mexphalte" and "Spramex," will be adopted for almost the whole of the works to be carried out, and a skeleton technical organization composed of three experienced English road engineers will act in an advisory capacity to both concessionnaire and contractors. The form of construction used will be asphalt concrete, asphalt macadam and ordinary macadam asphalt surfaced, according to importance of the roads to be dealt with.

The financing of the scheme has, up to the moment, been undertaken by a banking group. The total required is $30,000,000 in installments of $5,000,000 to $10,000,000 sterling over a period of five years.

For further promotion of the scheme a source of income exists in the form of a permanent roads fund. To this fund are allocated the whole of the proceeds of the benzine import duty amounting at present to $2,000,000 per annum. In spite of contemplated reductions in this duty, it is estimated that with the increased use of mechanical transport as a result of improved roads, this will be augmented to $4,000,000 to $4,685,000 per annum. A further contribution will be that from the tolls charged at various points; no indication is yet available as to what this will amount to beyond the figure of $128,000 per annum now collected from the stations on the mere 20 kilometers of roads recently constructed around Athens.

## CRUDE OIL PRICES

(Continued from Page 125)

| | |
|---|---|
| Big Muddy | 1.33 |
| Grass Creek, heavy | .90 |
| Grass Creek, light | 1.48 |
| Mule Creek (May 1) | 1.10 |
| Elk Basin | 1.48 |
| Lance Creek | 1.48 |
| Poison Spider (March 14, 1927) | 1.00 |
| Notches (March 14, 1927) | .65 |
| Rex Lake (February 22) | 1.10 |
| Osage | 1.48 |
| Lost Soldier (contract) | .95 |
| Hamilton Dome (March 14, 1927) | .85 |
| Greybull-Torchlight | 1.48 |
| Cat Creek (Montana) | 1.48 |
| Sunburst (Montana) (May 18, 1928) | 1.65 |
| Artesia | 1.08 |
| Hogback (New Mexico) | 1.48 |

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies post Grass Creek light and Elk Basin.

### EASTERN STATES

**Joseph Seep Purchasing Agency**
(Effective October 13, 1928)

| | |
|---|---|
| Penna Grade Oil in New York Transit Lines (New York) | $3.45 |
| Bradford District Oil in National Transit Lines (Pennsylvania) | 3.45 |
| Penna Grade Oil in National Transit Lines (Pennsylvania) | 3.35 |
| Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia) | 3.35 |
| Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania) | 3.25 |
| Penna Grade Oil in Buckeye Pipe Line Lines (Ohio) | 3.10 |
| Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (July 13) | 1.45 |
| Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s lines (August 8) | 1.70 |
| Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines (August 8) | 1.80 |
| Somerset Oil in Cumberland Pipe Line lines (Kentucky) (Sept. 14, 1928) | 1.75 |
| Ragland Grade Oil in Cumberland Pipe Line lines (Kentucky) (August 1) | .98 |

### MIDDLE WESTERN STATES

**Ohio Oil Co.**
(Effective July 27, 1928)

| | |
|---|---|
| Lima | $1.60 |
| Wooster (October 17) | 1.77 |
| Illinois | 1.55 |
| Indiana | 1.37 |
| Princeton | 1.55 |
| Plymouth | 1.28 |
| Waterloo (November 17, 1926) | 1.35 |
| Western Kentucky* (Sept. 17, 1928) | 1.69 |
| Saginaw, Mich., Saginaw Sand (February 10)† | 1.80 |
| Saginaw, Mich., Berea Sand (February 10)† | 1.79 |
| Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky, (March 16)‡ | 1.50 |
| Oil in lines of Stoll Oil Refining Co. in Oil City, Ky. (Oct. 1, 1928)§ | 1.75 |
| Oil Springs (Canada)¶ | 2.07 |
| Petrolia (Canada)¶ | 2.00 |

*Posted by Ohio Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.

### MEXICAN CRUDE

| | |
|---|---|
| Panuco heavy (f.o.b. Mexican ports) | $1.15 |

Note—Due to the fact that the exportation of Tuxpam light crude has become a negligible factor, prices will no longer be published.

# There are extra profits in selling OPALINE.. the extra service motor oil

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That's the *extra* service Opaline gives—that's the *extra* value an Authorized Opaline Dealer gives a motorist for his money. This Opaline method of applying motor oil is an exclusive one—a sure one for increasing business, by selling precision in lubrication. May we tell you the added advantage of selling such a favorably known, nationally advertised brand?

SINCLAIR REFINING COMPANY, INC.

*Also Makers of Sinclair Gasoline and H-C Gasoline*

45 NASSAU STREET, NEW YORK

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# Oil Company Earnings Are Improving

## Many Materially Better Their Condition in First Nine Months of Year Compared to Record of Previous Year

By Special Correspondent

NEW YORK, Oct. 29.—Earning statements of prominent oil companies covering their operations for the first nine months of 1928 show that marked improvement has occurred in practically every instance. While the showings of the large integrated companies, doing a heavy marketing volume, show the greatest gains, it is evident that even the producing companies have materially bettered their position thus far in the current year.

The upward swing in oil company earnings this year was particularly evident during the third quarter, although second quarter earnings were favorable in most instances. During the first three months of the year, the oil companies were still in the readjustment stage, and markets were just beginning to shape up for the year.

While reports already issued by large companies in the oil industry show substantial betterment of the general market condition, the full extent of the improvement will not be in evidence until the close of the year. Many of the largest companies in the industry, including Standard Oil Co. of New York, Sinclair Consolidated Oil Corp., Standard Oil Co. of New Jersey, Standard Oil Co. of Indiana, The Texas Corporation, Standard Oil Co. of California, Royal Dutch, and others report only on a half-year basis, and thus definite data on their earnings for the third and closing quarters of 1928 will not become available until the end of the year.

The third quarter of the year is normally the most profitable period for the oil companies. Last year was an exception to this rule, owing to the heavy pressure exerted by oversupply of both crude and products, and for this reason, statements covering the third quarter this year are all the more favorable.

### Situation Improved

As might be expected, the large integrated companies are showing the largest gains in earnings this year. This is due both to the record-breaking domestic consumption of gasoline, and the improvements in marketing conditions which have enabled the refiners to obtain a better marketing profit on their motor fuels. During the greater part of 1927, competitive conditions within the industry were such that gasoline sales showed relatively little net return.

Evidence of the stronger position of the major oil companies this year is afforded by the relative smallness of new financing totals. During 1927 many of the oil companies were forced to do new financing to strengthen their current position. This year, the cash position of the companies is notably better, and ordinary expansion programs are being financed out of current earnings to a great extent.

Although crude production has continued to run into large totals this year, and the problem of South American competition has grown more acute, the statistical position of the industry has nevertheless shown further firming up. Leading producers have taken hold of the production problem in this country in a manner which leaves no doubt as to the industry's attitude toward the problem of conservation, and steps have been initiated toward bringing the South American situation under control. Improvement in domestic marketing conditions is expected to be paralleled by a similar development in the export field, through formation of an oil trade export association, to handle foreign sales of principal producers.

Aside from the domestic situation, the world petroleum picture is much better. Apart from the destructive attitude which the Russian syndicate has adopted in world competition there has been a marked easing off in the competitive situation. The price war which had been raging in India between the Standard Oil Co. of New York and Royal Dutch-Shell interests has been settled, and principal European oil companies have reached an accord. With these developments, it is but natural that the financial outlook for the oil companies should be much better.

### Earning Statements

A comparison of the earning statements of a number of oil companies which have already announced their earnings for the first nine months of the year follows:

| Company— | First nine months 1928 | 1927 |
|---|---|---|
| Associated Oil | $5,548,872 | $2,096,682 |
| White Eagle O. & R. | 2,219,784 | 1,694,145 |
| Richfield Oil | 5,455,193 | 2,723,021 |
| Independent O. & G. | 2,138,574 | 1,843,935 |
| Warner-Quinlan Co. | 1,160,321 | 584,037 |
| Tide Water Asso. | 10,518,432 | 4,432,121 |
| Atlantic Refining | 11,908,987 | 144,419 |
| Transcontinental Oil. | 1,248,032 | *83,350 |
| Beacon Oil | 1,086,874 | 432,338 |
| Pierce Petroleum | 791,683 | 152,304 |
| Phillips Petroleum | 12,366,133 | 15,643,159 |
| Total | $52,443,285 | $29,746,161 |

*Net loss.

Earnings of the companies whose statements appear above show a gain of close to 100 per cent for the year. The showing made by Atlantic Refining this year is a remarkable one, and out of all proportion to the earning gains which may be looked for from the other large companies.

While the companies listed above do not include a number of the leading companies, the gains in earnings recorded are believed to be fairly representative of the gains made by the industry as a whole. Current earnings of the leaders in the Standard group, including New Jersey, New York, Indiana, California, Kentucky, Ohio and others are believed running well ahead of those for last year.

### Sinclair Consolidated

Rumors of an impending merger linking the Sinclair Consolidated Oil Corp. with another large eastern oil concern have been revived with the reported sale of a sizable block of stock from the treas-

### OIL BONDS ON THE NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange
Kennedy Bldg., Tulsa, Okla.

| Amount outstanding | Company— | Date | Pct. | Int. | Week ended October 26 Sales | High | Low | Close |
|---|---|---|---|---|---|---|---|---|
| ..... | Atlantic Refining Co. | July 1937 | 5 | J&J | 16,000 | 101¾ | 101⅛ | 101⅝ |
| 18,864,500 | Barnsdall Oil with war. | Dec. 1940 | 6 | J&D | 137,000 | 136 | 127 | 130 |
| 6,000,000 | Barnsdall Oil without war. | Dec. 1940 | 6 | J&D | 479,000 | 95⅝ | 94⅝ | 94⅝ |
| 11,400,000 | California Pet. conv. deb. | Nov. 1938 | 5½ | M&N | 76,000 | 103¾ | 103½ | 103½ |
| 7,400,000 | California Pet. conv. deb. | Feb. 1939 | 5 | F&A | 49,000 | 100⅝ | 100¼ | 100⅝ |
| ..... | General Petroleum | Aug. 1940 | 5 | F&A | 24,000 | 101 | 100¼ | 100⅝ |
| 25,000,000 | Humble O. & R. deb. | July 1932 | 5½ | J&J | 22,000 | 101¾ | 101⅝ | 101⅝ |
| 24,239,000 | Humble O. & R. deb. | Apr. 1937 | 5 | A&O | 35,000 | 100⅝ | 100 | 100¼ |
| 10,103,000 | Mid-Cont. Pet. Corp. | Mar. 1940 | 6½ | M&S | 6,000 | 105¼ | 105 | 105 |
| 3,745,000 | Pan-American Pet. & T. | Aug. 1930 | 7 | F&A | 3,000 | 104¾ | 104½ | 104½ |
| 10,161,900 | Pan-American Pet. & T. | Nov. 1934 | 6 | M&N | 70,000 | 104⅜ | 104 | 104½ |
| 40,000,000 | Phillips Pet. | June 1939 | 5¼ | J&D | 90,000 | 93⅝ | 93 | 93⅛ |
| ..... | Pierce Oil deb. | June 1931 | 8 | J&D | No sales. | | | |
| ..... | P. & R. Corp. | Dec. 1931 | 8 | J&D | No sales | 110¾ | 110¾ | 110¾ |
| ..... | P. & R. Corp. without war. | June 1931 | 8 | J&D | 3,000 | 110¾ | 110¾ | 110¾ |
| 20,000,000 | Pure Oil | Aug. 1937 | 5½ | F&A | 72,000 | 99¾ | 99⅛ | 99⅝ |
| 30,000,000 | Shell Pipe Line Co. | Nov. 1952 | 5 | M&N | 57,000 | 96 | 95⅝ | 96 |
| 50,000,000 | Shell Union Oil Co. | May 1947 | 5 | M&N | 66,000 | 98⅛ | 97½ | 98¼ |
| 3,431,500 | Simms Pet. Co. | Nov. 1929 | 6 | M&N | 290,000 | 104½ | 100¾ | 101⅝ |
| 44,816,500 | Sinclair Co. Oil Co. A | Mar. 1937 | 7 | M&S | 133,000 | 103 | 101¾ | 103 |
| 23,086,500 | Sinclair Co. Oil Co. B | Mar. 1938 | 6½ | J&D | 297,000 | 102 | 99¾ | 101½ |
| 20,000,000 | Sinclair Co. Oil Co. D | Sept. 1930 | 6 | M&S | 54,000 | 99¾ | 99 | 99¼ |
| ..... | Sinclair Cr. Oil Pur. Co. A | Jan. 1938 | 5½ | J&J | 93,000 | 99¾ | 97 | 97½ |
| ..... | Sinclair Pipe Line Co. | Oct. 1942 | 5 | A&O | 63,000 | 94⅞ | 93⅝ | 94½ |
| 15,000,000 | Skelly Oil Co. | Mar. 1939 | 5½ | M&S | 15,000 | 93¾ | 93½ | 93½ |
| ..... | Standard Oil of N. J. | Dec. 1946 | 5 | F&A | 69,000 | 103½ | 103 | 102½ |
| ..... | Standard Oil of N. Y. | Dec. 1951 | 4½ | J&D | 39,000 | 97 | 96½ | 96⅞ |
| ..... | Union Oil of Calif. | Jan. 1931 | 5 | J&J | 5,000 | 101⅝ | 101⅝ | 101⅝ |
| 8,934,500 | Union Oil of Cal. 20 yr. A | May 1942 | 6 | F&A | No sales. | | | |
| 9,419,000 | Union Oil of Cal. series C | Feb. 1935 | 5 | A&O | 17,000 | 99¼ | 98¼ | 99¼ |
| 4,870,000 | White Eagle Oil & Ref. | Mar. 1937 | 5½ | M&S | 80,000 | 101¾ | 100 | 101¼ |

## INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Kennedy Building, Tulsa, Okla.
Members New York Curb Market

| 1926 High | 1926 Low | 1927 High | 1927 Low | 1928 High | 1928 Low | Par value | Stocks | Week ended October 26 Sales | First | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $6.75 | .45 | 2 7/16 | .55 | 1½ | .66 | $5 | Amer. Con. Oilfields | 74,100 | 98 | 101¼ | 76 | 88 | —10 |
| .. | .. | 7½ | 2¾ | 6⅝ | 3⅛ | N.P. | Amer. Maracaibo | 4,700 | 4¾ | 4⅞ | 4⅜ | 4⅞ | +⅛ |
| .. | .. | 2¾ | 1 | 4½ | 2¼ | $10 | Argo Oil | 300 | 2½ | 2½ | 2½ | 2½ | ..... |
| 85¼ | 60 | 40 | 20½ | 49 | 32¾ | N.P. | British American | 400 | 46¾ | 48 | 46¾ | 48 | +½ |
| 28⅜ | 9¼ | 28¼ | 15½ | 23⅞ | 12½ | 25c | Carib. Syndicate (new) | 6,000 | 14⅝ | 15¾ | 14 | 15¾ | +1 |
| .. | .. | 58¾ | 40¼ | 72½ | 54 | $20 | Cities Service | 32,600 | 71½ | 71¾ | 69⅞ | 70½ | —1⅛ |
| .. | .. | 95⅝ | 87 | 103½ | 94½ | 100 | Cities Service, pfd. | 2,600 | 99¾ | 99⅞ | 99½ | 99⅞ | ..... |
| .. | .. | 8⅞ | 7⅜ | 9⅝ | 8⅞ | 10 | Cities Service, pfd. B | 700 | 9¼ | 9¼ | 9¼ | 9¼ | ..... |
| 3½ | 1¾ | 3⅞ | 1⅛ | 2¼ | 1 1/16 | 1 | Colombia Syndicate | 3,200 | 1⅛ | 1¼ | 1⅛ | 1¼ | +⅛ |
| .. | .. | 9⅜ | 6⅜ | 8⅛ | 6½ | 10 | Consolidated Royal | No sales. | | | | | |
| 16 | 10 | 14⅞ | 9½ | 17½ | 10 | N.P. | Creole Syndicate | 33,200 | 12½ | 13¾ | 12¼ | 12⅞ | +¼ |
| .. | .. | 3 | .50 | 2¾ | .76 | N.P. | Crown Central | 300 | 1⅜ | 1½ | 1⅜ | 1⅜ | —⅛ |
| 7⅞ | 6¾ | 12 | 4 | 30½ | 8⅛ | N.P. | Darby Petroleum | 93,300 | 31 | 33½ | 29¼ | 30½ | —¾ |
| .. | .. | 2½ | .74 | 2½ | 1 | N.P. | Derby Oil & Refining | 5,500 | 1⅜ | 2⅜ | 1⅜ | 1⅞ | +¾ |
| .. | .. | 16⅜ | 4 | 15½ | 7½ | N.P. | Derby Oil & Refining, pfd. | 1,900 | 17 | 18 | 16 | 18 | ..... |
| .. | .. | 2 | .40 | .53 | .15 | N.P. | Gilliland ctfs. | No sales—20@50. | | | | | |
| 98 | 92 | 118 | 86¼ | 148½ | 101⅛ | $25 | Gulf Oil Corp. | 33,700 | 125½ | 139 | 124⅝ | 135 | +10 |
| $3.00 | .83 | 2½ | .80 | 2¾ | 1 | 10 | Intercontinental Pet. | 15,300 | 1¾ | 2 | 1⅝ | 2 | +⅛ |
| .. | .. | 2¼ | 1⅛ | 3 | 1¼ | N.P. | Kirby Petroleum | 5,300 | 2¼ | 2¾ | 2¼ | 2⅝ | +⅜ |
| 12¼ | 5¾ | 10⅞ | 5⅛ | 9⅜ | 5⅛ | N.P. | Leonard Oil & Dev. | 700 | 5¼ | 5¾ | 5⅛ | 5¾ | +⅝ |
| 27 | 20 | 27½ | 20 | 33 | 20 | N.P. | Lion Oil & Refining | 15,700 | 40½ | 43⅜ | 40 | 40 | —⅛ |
| 46 | 30 | 59⅜ | 37 | 59⅞ | 49 | $25 | Lone Star Gas | 900 | 57⅛ | 57½ | 56 | 57½ | ..... |
| 2⅞ | 1 | 2⅞ | .80 | 1⅞ | .50 | 1 | Magdalena Syndicate | 18,400 | 75 | 95 | 73 | 75 | +3 |
| 34 | 12½ | 52 | 12 | 45 | 34½ | N.P. | Margay Oil | 200 | 35 | 35 | 34½ | 34½ | ..... |
| 8 | 5½ | 12⅛ | 5 | 8 | 4¼ | N.P. | Mexico-Ohio Oil | 100 | 3⅞ | 3⅞ | 3⅞ | 3⅞ | ..... |
| 1¾ | 1⅛ | 1½ | 1 | 1½ | .81 | $1 | Mountain & Gulf | 16,600 | 81 | 1¾ | 81 | 1⅛ | +¼ |
| 26 | 23 | 29¼ | 22¾ | 28⅝ | 21½ | 10 | Mountain Producers | 6,000 | 22 | 22 | 20⅞ | 22 | +¼ |
| 6⅝ | 5 | 5⅞ | 4⅝ | 5⅝ | 4¼ | 5 | New Bradford | 900 | 4½ | 5 | 4⅜ | 5 | +¼ |
| .. | .. | 16 | 9¼ | 11⅜ | 7⅛ | 1 | New Mex. & Ariz. | 600 | 8 | 8 | 7¾ | 7¾ | —1¼ |
| .. | .. | 12⅜ | 9½ | 13¼ | 10⅝ | N.P. | North Central Texas | 700 | 10⅞ | 10⅞ | 10⅝ | 10¾ | ..... |
| 10⅛ | 5⅞ | 9⅜ | 3¼ | 6 | 2¼ | N.P. | Pandem | 1,500 | 2⅝ | 2⅝ | 2⅛ | 2½ | ..... |
| 12¼ | 11¾ | 12⅛ | 7 | 15⅝ | 8½ | N.P. | Pantepec Oil | 15,200 | 12⅝ | 12⅞ | 11¾ | 12 | —1 |
| 22¾ | 12 | 13½ | 5⅛ | 7¾ | 5⅛ | $10 | Pennok Oil | No sales—5@6. | | | | | |
| 17 | 8½ | 24⅜ | 7 | 14½ | 9 | 25 | Red Bank Oil | No sales. | | | | | |
| 30¼ | 12 | 15½ | 3½ | 12⅞ | 4⅛ | N.P. | Reiter-Foster | No sales—9@12½. | | | | | |
| 7 | 4½ | 7 | 4½ | 9⅞ | 4⅝ | N.P. | Ryan Consolidated | 9,000 | 9⅞ | 10¼ | 8⅞ | 9 | —½ |
| 10 | 7⅛ | 8 | 5¼ | 7¼ | 5⅞ | $10 | Salt Creek Cons. | 400 | 6⅛ | 6⅛ | 6 | 6 | +¼ |
| 35 | 24⅛ | 35½ | 27¼ | 35 | 23¼ | 10 | Salt Creek Prod. | 200 | 5¾ | 5¾ | 5¾ | 5¾ | —¼ |
| 6⅞ | 1¼ | 7 | 1¼ | 3½ | 1 | 5 | Savoy Oil | 6,800 | 25 | 25 | 23½ | 24⅜ | —⅜ |
| 27 | 7⅝ | 26½ | 17 | 22⅞ | 13 | 10 | Tidal Osage | No sales—1½@1¾. | | | | | |
| 25¾ | 7⅝ | 23⅜ | 15 | 21¼ | 13⅛ | 10 | Tidal Osage, nonvoting | 4,200 | 20¾ | 20¾ | *15⅝ | 16⅞ | —3⅛ |
| 92 | 63½ | 92 | 63½ | 87 | 75 | 100 | Transcontinental, pfd. | 8,500 | 19⅛ | 19¼ | *15⅛ | 15¾ | —3⅜ |
| 8 | 4½ | 7⅜ | 4¼ | 8⅛ | 4⅞ | 5 | Venezuelan Petrol | 200 | 80½ | 81 | 80½ | 81 | +3 |
| 36⅛ | 22 | 32⅝ | 19½ | 25 | 15¼ | N.P. | Wilcox Oil & Gas | 199,000 | 7⅛ | 8⅞ | 7⅛ | 8⅜ | +1¼ |
| 8⅛ | 5½ | 8 | 4⅜ | 8¼ | 4⅞ | $1 | Woodley Petroleum | 200 | 5 | 5 | 5 | 5 | —½ |
| 6½ | 6 | 6 | 1⅜ | 8⅜ | 2⅛ | 25 | Y Oil & Gas (new) | 900 | 4½ | 4⅞ | 4½ | 4⅞ | +½ |

*Ex-dividend.

# TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

**Quotations Compiled by Francis, Bro. & Co., Members New York Stock Exchange, Kennedy Building, Tulsa, Okla.**

| 1926 High | 1926 Low | 1927 High | 1927 Low | 1928 High | 1928 Low | Listed capital | Par value | Stocks— | Div. rate | Last paid | Transactions week ended October 27 Sales | Open | High | Low | Last | Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 32⅞ | 24¼ | 37⅝ | 27⅝ | 38 | 27⅛ | (sh) 922,075 | N.P. | Amerada Corp. | 50cQ | July 31, 28 | 16,700 | 31⅜ | 33¾ | 31¼ | 32 | + ⅞ |
| 74 | 39⅞ | 82½ | 35⅛ | 85 | 51¼ | (sh) 209,180 | N.P. | American Republics Corp. | ..... | ..... | 23,900 | 69⅞ | 76⅝ | 66⅛ | 71⅝ | + 5⅛ |
| 60 | 44¾ | 50¼ | 35 | 53⅜ | 37½ | $56,000,000 | $25 | Associated Oil | 50cQ | June 30, 28 | | | | | | |
| 128⅜ | 97 | 131⅜ | 104 | 195 | 95¾ | 50,000,000 | 100 | Atlantic Refining | $1Q | Sept. 15, 28 | 157,700 | 194¾ | 239⅝ | 188½ | 227 | +36 |
| 33½ | 23½ | 35½ | 20¾ | 44⅜ | 20 | 28,725,675 | 25 | Barnsdall Corp. A | ..... | Feb. 6, 28 | 215,700 | 44⅞ | 47⅛ | 42¾ | 45¼ | — 2¾ |
| 94¼ | 50 | 96⅜ | 65 | 94⅞ | 68 | 20,785,400 | 100 | General Asphalt | ..... | ..... | 17,600 | 72 | 74½ | 69⅛ | 73 | + 1 |
| 72 | 50¼ | 175¾ | 60⅛ | 167 | 119 | 25,000,000 | 100 | Houston Oil | ..... | ..... | 10,800 | 140¾ | 144⅜ | 137 | 137 | — 2 |
| 34 | 19⅝ | 32¾ | 17⅝ | 32⅜ | 21¾ | (sh) 500,000 | N.P. | Independent Oil & Gas | 25cQ | July 31, 28 | 51,100 | 31½ | 34¼ | 30½ | 32⅜ | + 1 |
| 12¾ | 7½ | 12⅛ | 7⅝ | 39⅝ | 9 | $3,280,340 | $10 | Indian Refining | ..... | May 31, 24 | 22,100 | 32¾ | 33⅞ | 31⅜ | 31⅜ | — ⅞ |
| 25⅞ | 16½ | 37¾ | 20½ | 39⅛ | 27⅜ | (sh) 3,992,122 | N.P. | Lago Oil & Transport | ..... | May 1, 27 | 3,000 | 33 | 34½ | 32⅛ | 33¼ | + ¼ |
| 19⅞ | 12 | 18⅛ | 10 | 19¾ | 9⅜ | (sh) 1,237,078 | N.P. | Lousiana Oil Refining | ..... | ..... | 54,200 | 17¾ | 17⅝ | 16½ | 16⅞ | — ⅞ |
| 28 | 16½ | 22¾ | 12 | 25½ | 12½ | (sh) 330,000 | N.P. | Maracaibo Oil | ..... | ..... | 16,500 | 18½ | 20¾ | 18¾ | 19½ | + ¼ |
| 63⅜ | 49¼ | 58½ | 31 | 44½ | 33 | (sh) 2,316,692 | N.P. | Marland Oil Co. | ..... | Mar. 31, 27 | 194,500 | 39⅝ | 44½ | 39⅜ | 43¾ | + 4⅛ |
| 13¾ | 6 | 9¼ | 3 | 41½ | 4⅝ | (sh) 945,939 | N.P. | Mexican Seaboard | ..... | Dec. 15, 20 | 71,600 | 37⅛ | 38⅞ | 35 | 36⅛ | — 1¼ |
| 37 | 20½ | 39⅜ | 25½ | 37½ | 25⅛ | (sh) 1,357,461 | N.P. | Mid-Continent Petroleum | ..... | Aug. 1, 27 | 1,467 | 35½ | 38⅜ | 35 | 37¾ | + 2⅜ |
| 104¼ | 90 | 105 | 97 | 115⅛ | 103¼ | $6,718,000 | $100 | Mid-Continent Petroleum pfd. | $1.75Q | Sept. 1, 28 | 1,000 | 112½ | 112½ | 112½ | 112½ | — ½ |
| 2½ | ½ | 3¾ | 1⅝ | 7⅜ | 2⅜ | 24,298,850 | 10 | Middle States | ..... | July 1, 23 | 63,500 | 5¾ | 6⅜ | 5½ | 5¾ | + ⅛ |
| 76½ | 56⅛ | 65⅞ | 40⅛ | 53¾ | 38¼ | $48,807,400 | $50 | Pan American P. & T. | ..... | Oct. 20, 27 | 30,000 | 48¼ | 51⅞ | 47 | 50 | + 1½ |
| 78⅝ | 56⅞ | 66⅜ | 40¼ | 54⅝ | 37¾ | 121,097,900 | 50 | Pan American P. & T. B. | ..... | Nov. 15, 24 | 2,150 | 50¾ | 53⅞ | 48 | 52 | + 1½ |
| 46 | 30 | 37⅞ | 16¾ | 28⅜ | 15½ | (sh) 400,000 | N.P. | Pan American Western B | ..... | Jan. 30, 27 | 600 | 17½ | 17¾ | 17½ | 17½ | ..... |
| 32 | 4½ | 18⅞ | 8 | 21¾ | 11½ | (sh) 198,770 | N.P. | Panhandle P. & R. | ..... | ..... | 24,600 | 14½ | 17⅜ | 14½ | 16⅜ | + 2¼ |
| 99⅜ | 51 | 83 | 54 | 106¼ | 70 | $2,935,200 | $100 | Panhandle P. & R. pfd. | ..... | July 2, 23 | 900 | 80 | 90¼ | 80 | 90 | +10 |
| 57⅜ | 40 | 60¼ | 36¼ | 44⅝ | 35¼ | (sh) 2,406,796 | N.P. | Phillips Petroleum | 37½Q | Oct. 1, 28 | 128,800 | .... | 45¾ | 42½ | 44¼ | + 1¾ |
| .... | .... | 1⅛ | ½ | 5¼ | ½ | $29,622,925 | $25 | Pierce Oil Corp. | ..... | ..... | 18,500 | 3 | 3½ | 3 | 3¼ | + ¼ |
| 7 | 2¼ | 5½ | 2½ | 6⅝ | 3½ | (sh) 2,500,000 | N.P. | Pierce Petroleum | ..... | ..... | 25,700 | 5½ | 6 | 5¼ | 5⅜ | + ⅜ |
| 20¾ | 11 | 33⅞ | 16¾ | 28⅝ | 16 | $37,450,850 | $50 | Producers & Refiners | ..... | Sept. 15, 23 | 7,100 | 23¼ | 25⅜ | 23¾ | 24⅛ | + ⅞ |
| 41⅜ | 30⅜ | 50 | 36⅞ | 49⅝ | 41 | 2,845,350 | 50 | Producers & Refiners pfd. | ..... | May 1, 25 | 210 | 24 | 45 | 43 | 43½ | — 1½ |
| 31 | 25¼ | 33½ | 25 | 27½ | 19 | 75,959,350 | 25 | Pure Oil Co. | 12½Q | Sept. 1, 28 | 235,800 | .... | 28½ | 25⅝ | 27⅝ | + 1⅝ |
| 27½ | 22 | 28⅝ | 25⅜ | 53 | 23½ | $29,224,894 | $25 | Richfield Oil | ..... | Oct. 20, 27 | 35,500 | 49½ | 49½ | 47½ | 47½ | — 1⅛ |
| 57⅜ | 47⅜ | 54½ | 44¼ | 61 | 44⅝ | (sh) 611,303 | 13.40 | Royal Dutch, N. Y. shares | $1.879 | Aug. 3, 28 | 3,500 | 63⅜ | 63⅜ | 62 | 62 | — 2 |
| 48⅝ | 40½ | 47⅞ | 41⅜ | 54¼ | 40⅝ | (sh) 77,590 | £2 | Shell Transport & T. | $1.455 | July 23, 28 | 400 | 57⅛ | 57½ | 56 | 56 | + 1¾ |
| 31 | 24 | 31¾ | 24⅝ | 31 | 23¼ | (sh) 10,000,000 | N.P. | Shell Union Oil | 35cQ | Sept. 30, 28 | 1,253 | 29⅜ | 31⅞ | 29 | 31⅞ | + 2⅜ |
| 28⅝ | 15⅛ | 26⅜ | 14¼ | 25⅛ | 18⅛ | $7,208,080 | $10 | Simms Petroleum | ..... | Apr. 1, 27 | 41,200 | 24⅝ | 25½ | 23½ | 24⅜ | ..... |
| 24⅞ | 16¾ | 22⅜ | 15 | 32⅛ | 17⅜ | (sh) 4,501,915 | N.P. | Sinclair Consolidated | ..... | ..... | 1,424,600 | 30⅛ | 37½ | 29 | 36½ | + 6⅝ |
| 99½ | 90 | 104½ | 97 | 109½ | 102½ | $16,604,600 | $100 | Sinclair Consolidated pfd. | $2Q | Aug. 15, 28 | 500 | 108 | 109 | 108¼ | 109 | + 1 |
| 37⅛ | 26⅝ | 37⅜ | 24⅛ | 37⅜ | 25 | 27,396,590 | 25 | Skelly Oil Co. | 50cQ | Sept. 15, 28 | 72,400 | 37¼ | 39 | 36⅝ | 38 | + 1 |
| 63⅝ | 51½ | 60¾ | 50⅜ | 63⅞ | 53 | (sh) 13,016,434 | N.P. | Standard Oil of California | 62½cQ | Sept. 15, 28 | 1,090 | 61⅛ | 63½ | 61⅛ | 62⅝ | + 1⅛ |
| 46⅜ | 37½ | 41⅜ | 35⅛ | 49 | 37¾ | $607,910,525 | $25 | Standard Oil of New Jersey | ‡25cQ | Sept. 15, 28 | 90,300 | 46 | 47½ | 45⅝ | 46¾ | + 1 |
| 47¼ | 30⅜ | 34⅛ | 29¾ | 41½ | 28¾ | 427,973,275 | 25 | Standard Oil of New York | 40cQ | Sept. 15, 28 | 81,400 | 35⅜ | 36⅝ | 35 | 35⅞ | + ¾ |
| 41⅝ | 30⅛ | 34⅞ | 30 | 59½ | 31½ | (sh) 1,206,073 | N.P. | Sun Oil | 25cQ | Sept. 15, 28 | 9,400 | 60 | 65⅛ | 58¼ | 63¼ | + 3¼ |
| 5¼ | 1 | 6½ | 3⅛ | 9⅞ | 2½ | (sh) 1,121,368 | N.P. | Superior Oil Corp. | ..... | Dec. 20, 20 | 332,100 | 9⅜ | 11⅞ | 9 | 11¼ | + 2¼ |
| 58 | 48 | 58 | 45 | 73½ | 50 | $180,480,550 | $25 | The Texas Corporation | 75cQ | Oct. 1, 28 | 84,600 | 67½ | 69⅛ | 66⅞ | 68⅜ | + 1⅛ |
| 19½ | 12 | 18⅞ | 12 | 17½ | 12½ | 8,380,340 | 10 | Texas Pacific Coal & Oil | ..... | Jan. 3, 28 | 50,700 | 16¾ | 17½ | 15⅝ | 17¼ | + ⅞ |
| 39¼ | 27 | 29⅛ | 19 | 36 | 19⅝ | (sh) 2,168,410 | N.P. | Tide Water Oil Co. | 20cQ | June 30, 28 | 2,800 | 34½ | 34½ | 32 | 34 | — ½ |
| 103 | 87¼ | 90⅛ | 85 | 94½ | 86 | $20,705,200 | $100 | Tide Water Oil Co. 5% pfd. | $1.25Q | Aug. 15, 28 | 1,900 | 94 | 95¼ | 94½ | 95¼ | + 1¼ |
| 27 | 20⅞ | 19⅛ | 15⅜ | 25 | 14⅜ | (sh) 4,796,158 | N.P. | Tide Water Associated | ..... | Aug. 1, 27 | 61,500 | 22¾ | 23½ | 22¾ | 22½ | — ½ |
| 5½ | 3 | 10⅜ | 3¾ | 10⅛ | 7¼ | (sh) 3,742,029 | N.P. | Transcontinental Oil | ..... | ..... | 94,600 | 8⅛ | 9 | 8⅛ | 8¾ | + ⅝ |
| 58⅜ | 37¼ | 56½ | 39⅝ | 57 | 42¾ | $40,791,225 | $25 | Union Oil of California | 50cQ | Aug. 10, 28 | 39,600 | 52⅞ | 56 | 52 | 53 | + 1 |
| 120⅜ | 84¼ | 127½ | 94 | 128⅛ | 116¾ | 30,844,000 | 100 | Union Tank Car Co. | $1.25Q | Sept. 1, 28 | 1,200 | 113 | 120 | 113 | 117 | + 3 |
| 30⅛ | 23½ | 34½ | 24½ | 44⅞ | 26 | (sh) 310,956 | N.P. | Warner Quinlan | 50cQ | July 2, 28 | 32,700 | 42¾ | 42½ | 40⅝ | 41 | — 1⅜ |
| 29¾ | 25⅛ | 27½ | 20 | 30¼ | 20⅛ | (sh) 490,000 | N.P. | White Eagle Oil & Refining | 25cQ | July 2, 28 | 15,700 | 29¼ | 30⅛ | 29⅛ | 29⅞ | — ⅛ |

*Odd lots. ‡Also extras.

# STANDARD OIL STOCKS ON NEW YORK CURB

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | 16 | 21⅝ | 17⅞ | 22⅝ | 16⅜ | £4,126,460 | £1 | Anglo-American Oil | 24.4c | June 6, 28 | 4,000 | 18⅝ | 18⅞ | 18⅝ | 18⅝ | ..... |
| .... | .... | 3¾ | ¾ | 5 | 1¼ | (sh) 500,000 | N.P. | Atlantic Lobos | ..... | ..... | 1,100 | 3¼ | 3⅛ | 3 | 3 | — ⅛ |
| 75 | 65 | 69 | 50 | 56 | 48½ | 1,000,000 | 25 | Borne Scrymser | $1S.A. | Apr. 16, 28 | 200 | 45¾ | 45¾ | 45½ | 45½ | — ½ |
| 59½ | 42 | 60 | 45 | 76 | 53 | 10,000,000 | 50 | Buckeye Pipe Line | $1Q | Sept. 15, 28 | 400 | 66¼ | 66¼ | 65½ | 66 | — 1 |
| 82½ | 65 | 126 | 76½ | 161 | 117¼ | 3,000,000 | 25 | Chesebrough Mfg. | $1Q | Sept. 29, 28 | 900 | 138 | 147 | 138 | 146 | + 8 |
| 25⅞ | 17½ | 22⅝ | 16¼ | 23 | 16 | 36,057,840 | 10 | Continental Oil | ..... | Dec. 15, 27 | 21,100 | 17⅝ | 18¼ | 17 | 17⅝ | + ½ |
| 137 | 102 | 137 | 89 | 114 | 88 | 3,000,000 | 100 | Cumberland Pipe Line | $2Q | Sept. 15, 28 | No sales. | | | | | |
| 63¾ | 43 | 68½ | 47 | 88 | 64⅛ | 5,000,000 | 100 | Eureka Pipe Line | $1Q | Aug. 1, 28 | 200 | 68¾ | 70¼ | 68¾ | 70¼ | + ¼ |
| 32½ | 9⅞ | 13½ | 3½ | 12 | 5 | 16,000,000 | 100 | Galena Signal Oil | ..... | June 30, 25 | 200 | 7½ | 7½ | 7½ | 7½ | + ⅝ |
| 68⅜ | 52 | 68½ | 54 | 84¾ | 60 | 73,117,577 | 25 | Humble Oil & Refining | 30cQ | July 1, 28 | 20,800 | 82⅛ | 86⅝ | 81⅛ | 85¼ | + 2¾ |
| 144½ | 125½ | 182 | 123¾ | 245 | 176½ | 20,000,000 | 100 | Illinois Pipe Line | $6S.A. | June 15, 28 | 200 | 222 | 222 | 219¾ | 219¾ | + 2¼ |
| .... | .... | 64¾ | 37¾ | 84¾ | 56¾ | (sh) 6,458,267 | N.P. | Imperial of Canada | 25cQ | Sept. 1, 28 | 2,000 | 83¾ | 83¾ | 82 | 83¾ | + ¼ |
| 72½ | 58 | 94½ | 61 | 91⅞ | 74⅞ | $5,000,000 | $50 | Indiana Pipe Line | $1Q | Aug. 15, 28 | 600 | 88½ | 89¾ | *85 | 85 | + 1½ |
| 35½ | 28¾ | 39 | 28¼ | 45¼ | 35 | (sh) 17,123,444 | N.P. | International Petroleum | 25c | June 30, 28 | 28,300 | 41½ | 45¼ | 41 | 44¼ | + 3¼ |
| 20⅜ | 12½ | 24 | 13¼ | 32⅜ | 20⅛ | $6,363,350 | 12.50 | National Transit Co. | 25cQ | June 15, 28 | 400 | 24 | 24⅜ | 23½ | 23½ | — ¾ |
| 51½ | 27¼ | 44½ | 31¼ | 71 | 37½ | 5,000,000 | 100 | New York Transit | ..... | July 15, 26 | 650 | 70 | 75 | 70 | 75 | + 5 |
| 80½ | 64 | 100 | 70 | 125 | 62 | 4,000,000 | 100 | Northern Pipe Line | $3S.A. | July 1, 28 | 150 | 63 | 63 | 63 | 63 | ..... |
| 67¾ | 55¾ | 67⅞ | 52 | 68¼ | 58 | 60,000,000 | 25 | Ohio Oil Co. | 50cQ | Sept. 15, 28 | 9,600 | 61¼ | 65 | 61 | 63½ | + 2¼ |
| 24¾ | 15 | 39 | 12 | 44 | 29 | 10,000,000 | 25 | Penn Mex. Fuel | $1.25 | May 31, 28 | 500 | 40 | 41⅞ | 40 | 41⅞ | + ⅜ |
| 137½ | 122½ | 190 | 132 | 223 | 172 | 81,000,000 | 100 | Prairie Pipe Line | $3.50 | July 31, 28 | 5,850 | 190¾ | 217 | 190 | 208 | +17 |
| 60¼ | 48 | 55½ | 45⅝ | 56 | 46 | 60,000,000 | 25 | Prairie Oil & Gas | ..... | Aug. 31, 27 | 78,800 | 47 | 55¾ | 46⅞ | 53¼ | + 6⅜ |
| 220 | 84½ | 201½ | 175½ | 186 | 167 | 4,000,000 | 100 | Solar Refining | $5S.A. | June 20, 28 | 150 | 180 | 183 | 180 | 183 | ..... |
| 74½ | 61½ | 27¼ | 15½ | 35⅞ | 12 | 5,000,000 | 50 | Southern Pipe Line | $2 | Dec. 1, 27 | 100 | 14½ | 14½ | 14½ | 14½ | — ½ |
| 50 | 34½ | 41½ | 35 | 68 | 36¾ | 2,000,000 | 25 | South Penn Oil | 50cQ | Sept. 29, 28 | 15,900 | 62¼ | 67⅞ | 62¼ | 66 | + 2½ |
| 56 | 47½ | 83 | 55½ | 100 | 70 | 3,500,000 | 100 | Southwest Pa. Pipe Lines | $1Q | July 2, 28 | No sales. | | | | | |
| 70½ | 60½ | 81½ | 64⅝ | 83⅝ | 70⅞ | 228,415,463 | 25 | Standard Oil of Indiana | 62½Q | Sept. 15, 28 | 65,900 | 77½ | 81⅞ | 77¼ | 81¼ | + 3½ |
| 36½ | 16½ | 20⅞ | 14⅝ | 27¾ | 15 | 8,000,000 | 25 | Standard Oil of Kansas | ..... | June 16, 24 | 3,500 | 20¾ | 22¼ | 20¼ | 21¾ | + ½ |
| 134⅜ | 108 | 130 | 111½ | 140 | 122¼ | 17,012,559 | 25 | Standard Oil of Kentucky | $1Q | June 30, 28 | 37,100 | 139½ | 154 | 138¾ | 153 | +13 |
| 51⅛ | 42 | 49½ | 40 | 45⅞ | 39⅞ | 4,559,850 | 25 | Standard Oil of Nebraska | 63cQ | Sept. 20, 28 | 700 | 43¾ | 49⅞ | 43¾ | 48 | + 3¾ |
| 372 | 288 | 87½ | 72 | 95 | 71 | 14,000,000 | 25 | Standard Oil of Ohio | 62½cQ | July 2, 28 | 650 | 92½ | 93 | 92 | 93 | + ¼ |
| 21 | 15 | 21 | 14½ | 26 | 16 | 30,734,000 | 25 | Swan Finch Co. | ..... | Nov. 1, 19 | No sales. | | | | | |
| 109⅜ | 90¼ | .... | .... | 87⅛ | 72¼ | 124,941,600 | 25 | Vacuum Oil | 75cQ | Sept. 20, 28 | 14,900 | 80¼ | 82¼ | 78¾ | 81¾ | + 1 |

*Ex-dividend.

ury to Arthur Cutten, of Chicago, and associates. At various times, the name of the Sinclair corporation has been coupled with that of several leading oil companies, but officials of Sinclair have denied all of the merger rumors. Early this year, it was reported that a consolidation between Sinclair and Prairie Oil & Gas was in the making, but nothing so far developed in this direction.

Recently, there have been reports that Sinclair and Atlantic Refining might combine, but nothing official in this connection has been forthcoming. Officials of the Sinclair organization have steadfastly maintained that the company was neither on the market for sale, nor that it contemplated merger with any other company.

This week's transaction involving the sale of a substantial block of treasury stock to the Chicago interests, it is believed, puts the Sinclair company in a strong position. The amount of stock involved, and the purposes for which the new funds are involved, are unknown yet. The Chicago interests mentioned have been reported as heavy buyers of stock in two or three other eastern oil corporations during recent months, but it does not appear that this buying is being done with a view of consolidating all of the companies involved.

The current financial position of the Sinclair Consolidated Oil Corp. does not indicate the need for any additional funds. In the past two years, at a time during which the oil industry as a whole issued close to $500,000,000 of new securities, the Sinclair corporation has not only eliminated its floating debt and reduced its funded debt, but has practically

(Continued on Page 132)

# Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

*This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.*

*Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.*

*Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.*

*All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.*

*Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.*

## FRASH PROCESS FOR DESULPHURIZING

**What is the Frash process for the removal of sulphur from oil, and is this process patented?—G. A. H.**

The Frash patent was the result of investigations for the treatment of the Lima and Petrolia oils many years ago and has long since expired. The description below is as given by Leslie in Motor Fuels, page 413.

This process consisted in heating the distillate over finely ground cupric oxide in a 1,200 to 1,500-bbl. still of the cheese-box type, fitted with an agitator framed from a central vertical gear driven shaft and carrying drag chains. The inside of the still was perfectly smooth so that the copper oxide could be kept in motion at all points, thus avoiding burning it onto the plates of the still. The oil was pumped to the still along with the copper oxide in suspension in a small amount of heavy oil. Five to six pounds of copper oxide were ordinarily used per barrel of oil. In refining some oils as much as 12 pounds of oxide were used per barrel of oil treated. When about 85 per cent of the oil had been distilled, a second charge, along with more copper oxide in the proportion of 5 to 6 pounds per barrel of oil, was pumped in and mixed with the hot residuum. The agitator ran constantly. Six or seven charges of oil and oxide were run in this manner and then the fire was drawn and the still cleaned. The copper oxide was then withdrawn, cooled, filtered and the press-cake revivified by roasting. The sweetened water-white distillate that might still contain over 0.1 per cent sulphur could then be finished by the usual acid and soda treatment. The sulphur content of the completely refined oil would be about 0.04 per cent. The oil adhering to the cake furnished most of the fuel required. In the preliminary roasting, the sulphur content of the press-cake was reduced from 11 per cent to 3 or 4 per cent. The lumps were then crushed and passed through a series of roasting furnaces in which the sulphur content was reduced to about 1.5 per cent. After being ground to a fine powder, the oxide was ready to be used again.

At this time we are evidencing a keen interest in the methods for desulphurizing because of the large quantities of high sulphur crudes which are being produced. While the copper oxide treatment was first proposed for the Lima and Petrolia oils it appears to be suitable for reducing the sulphur in the high sulphur crudes such as are being found in Texas. Copper oxide does not remove all of the sulphur and is without action in the liquid phase on the monosulphides, disulphides, and thiophenes.

The reaction for the removal of mercaptans may be explained by the following:

$$2\ RSH + CuO = (RS)_2Cu + H_2O$$

$$(RS)_2Cu + CuO = R_2S + Cu_2O$$

$$(RS)_2Cu = R_2S + CuS$$

The second and third reactions take place under the application of heat. These indicate that all of the sulphur is not removed; a part being converted to the alkyl sulphide and another part being combined with the copper oxide. The alkyl sulphide passing into solution in the petroleum product and that part of the sulphur combining with the copper is removed.

## EQUIVALENT VALUE NATURAL GAS AND FUEL OIL

**Your issue of September 27, page 138, has an article, "Gas Equivalent of Fuel Oil." I wish to ascertain the same information, as tabulated, for natural gas of reasonable heating value as compared with fuel oil in the same gravities you have in this article?—L. B. S.**

When estimating the comparative fuel values of natural gas and fuel oil it is a common practice to use the approximate value, that is, 3.5 bbls. of fuel oil are equivalent in heating power to 18,000 cubic feet of natural gas. If more exact figures are required, they should be based on actual analyses of the two fuels. Natural gas is usually assumed to have a heating value of at least 950 B.t.u. per foot, and this value has been selected for the comparison requested. The gravities in the first column are for the fuel oils.

| A.P.I. grav. | B.t.u. per lb. | Lbs. per gal. | B.t.u. per gal. | B.t.u. per bbl. | One bbl. fuel oil is equivalent to gas cubic feet |
|---|---|---|---|---|---|
| 10 | 18,650 | 8.328 | 155,317 | 6,523,314 | 6,866 |
| 12 | 18,730 | 8.211 | 153,792 | 6,459,264 | 6,799 |
| 14 | 18,810 | 8,096 | 152,266 | 6,396,012 | 6,732 |
| 16 | 18,890 | 7,986 | 150,856 | 6,335,952 | 6,669 |
| 18 | 18,970 | 7,877 | 149,427 | 6,275,934 | 6,606 |
| 20 | 19,050 | 7,772 | 148,057 | 6,218,394 | 6,545 |

While comparisons of fuels should be made on the basis of available heat units, it should be noted that the kind of burner, furnace and recirculating system have a considerable influence on the actual utilization of the heat.

## PETROLEUM COKE AND GASOLINE

**How much petroleum coke is produced per barrel of gasoline obtained by the average cracking process?—V. R.**

There are so many varying conditions in the charging stock and the operation of the different cracking processes that it is a question if it is possible to arrive at an average cracking process. However, Doctor Egloff discussed the relation of gasoline to coke production at the recent World Power Conference in London, as reported in The Oil and Gas Journal, page 255, October 18, 1928. The material below is from page 362 and the tables have been summarized:

The greatest stumbling block in the development of the art of cracking oil has been the problem of coke formation. Millions of dollars have been expended to overcome the deposition of coke on the heating portions of the cracking stills. A number of cracking installations in operation crack only low coke-forming oils and are strictly limited to selected charging stocks. The most modern cracking process treats all types of oils, whether they produce, as some oils do, less than 0.1 per cent of coke, or produce coke equal to 25 per cent of the weight of the oil, while the yields of gasoline vary from 15 to over 75 per cent, with practically no coke deposition on the heating elements. The lower gasoline yield mentioned is obtained when operating primarily to reduce the viscosity of heavy oils. The facility with which high coke forming oils are cracked is seen from the fact that in operations where 320,000 pounds of coke were deposited in the reaction chambers only about 30 were deposited in the heating tubes.

The percentage yields of gasoline and the amounts of coke per barrel of oil resulting from cracking a variety of charging stocks, under varying conditions of temperature and pressure, are shown in the table following:

| Charging stock— | Grav. A.P.I. | U. S. Motor gasoline per cent | Coke lbs. per bbl. charging stock |
|---|---|---|---|
| Crude oil... | 12.6/29.6 | 24.0 to 45.0 | 5.0 to 29.0 |
| Topped crude oils | 17.8/38 | 33.0 to 66.5 | 5.0 to 65.0 |
| Fuel oils... | 9.7/28.3 | 18.0 to 78.9 | 2.9 to 77.0 |
| Gas oils.... | 21 /38.4 | 35.0 to 72.0 | 0.2 to 32.0 |

Cracking process coke, a smokeless fuel, is being produced at the rate of approximately 1,000,000 tons a year. It is of high thermal value and in properties varies with the charging stock. Usually it has a honeycomb structure, being penetrated both by fine capillaries and larger interstices. The sulphur content varies quite widely and is a function of the sulphur content of the oil subjected to cracking. Coke derived from certain low sulphur oils has been commercially used for electrodes for electrochemical processes. The bulk of the production, however, is used for fuel, either in lump form briquettes or powdered. In pulverized form it would be an excellent marine fuel.

## BAUXITE AND ITS USE IN REFINING

**What is bauxite and is it used to any extent in refining?—F. K.**

Bauxite is a special kind of clay which is one of the important ores of aluminum and also the raw material for the manufacture of a large variety of chemical compounds containing aluminum. Its use in the refining industry is for the removal of color by filtering in a similar manner to fullers earth.

This earth is roasted to remove excess water and organic matter before it is used in the filtering operation. Like fullers earth, there seems to be some mechanical action or physical structure in a bauxite of high color removing power, because the chemical composition does not have a bearing on this property.

Dr. A. E. Dustan, who has made a study of the high-grade bauxite found in India and its use in the refining of the distillates from Persian crude, remarked in his lecture January 23, 1928, before the Royal Society of Arts that recent observations had caused a renewed interest in the use of bauxite for removing the color from oil. One of these was that one could pass an oil containing mercaptans apparently right through a properly activated bauxite, and the mercaptans would come through unscathed, whereas sulphides or disulphides would be adsorbed in the ordinary way. That observation had led to further experiments, and it was found that one could get bauxite either capable of adsorbing mercaptans or entirely incapable of doing so. If the bauxite were roasted in a current of excess air the material would adsorb the mercaptans with extreme ease. If the same bauxite were roasted in a current of sulphur dioxide or carbon dioxide, or nitrogen, or hydrogen, then, although the sulphides and disulphides were perfectly easily adsorbed, the mercaptans were not touched. It was ultimately traced to this, that in roasted bauxite produced in the ordinary way there was more or less oxygen adsorbed in the capillary spaces, and the reactive mercaptans were oxidized and the disulphides maintained. If there were no oxygen the mercaptans passed on. This indicates selective adsorption.

Bauxite is not used to any great extent in the United States for filtering petroleum products, but large quantities are reported to be used in several foreign fields.

## FLASH POINT OF LUBRICATING AND FUEL OILS

**What is the difference between closed cup and open cup flashpoints in laboratory equipment generally used to determine flashpoint? Information desired for lubricating and domestic heating oil business.—A. H.**

The temperature at which an oil evolves vapors or gases that will momentarily ignite, that is flash, in the presence of a small flame or spark, when placed in the atmosphere directly over the oil, is known as the flashpoint. The temperature at which the flash will occur depends upon a number of factors aside from the composition of the oil. Some of these include the surface exposed, the volume of oil, the rate of heating, circulation of the air, size of the test flame, period between testing and the type of vessel in which the oil is heated. These conditions have been carefully considered when developing the apparatus and test methods by the American Society for Testing Materials.

In general, it may be said that there is no relation between the flashpoints obtained by the open cup method and by the closed cup method. When working with a known knock, such as 165 degrees Fahrenheit kerosene, the closed cup will frequently give a flashpoint about 15 to 20 degrees lower than when the determination is made in an open cup. It should be noted that these are temperatures obtained under test conditions and have no relation to what may be obtained in actual service. The flashpoint of an oil is simply an indication of the temperature at which an oil will give off vapors in sufficient quantity to form an inflammable mixture in the presence of air.

The standard specifications for fuel oils according to the methods developed by A.S.T.M. and adopted by the United States Government, see Technical Paper 323B, United States Bureau of Mines, requires that the flashpoint of fuel oils shall not be lower than 150 degrees Fahrenheit and must be tested in a Pensky-Martens closed tester. When an oil does not flash in an open cup below 175 degrees Fahrenheit the determination for flashpoint shall be determined in the Cleveland open cup; see page 66 of the above reference.

## HYDROMETER DEGREES BRIX

**I received by mistake a plain hydrometer marked in degrees Brix and wish to know what are degrees Brix.—R. W. A.**

Hydrometers are made for all sorts of liquids met with in various industries and the instrument you have is a special one used in the sugar industry.

Degrees Brix correspond with the percentage of sugar in solution. These may be converted to specific gravity or Baume degrees by use of the tables found in all of the standard reference books. Degrees Brix 10 and 20, or 10 and 20 per cent sugar by weight, are equal to 1.04 specific gravity or 5.57 degrees Baume; and 1.0829 or 11.1 respectively.

## FAIR BUSINESS IN THE CHICAGO MARKET

(Continued from Page 118)

but the demand is rather limited for this grade. It may come in rather handy later.

### Fuel Oils

Fuel oils are moving steadily because there is a steady consumption but aside from the high gravity oils which are low in sulphur, the business was very dragging last week. There were about the usual number of inquiries for supplies for November. In several instances the quantity was less than usually named in these inquiries showing either the conerns were not using as much oil or had an idea they could buy to as good advantage later. Another feature has been the return to the market of some refiners who had not been offering their fuel oil or had quoted prices out of line with the market. These factors have, when added to the large stocks available, given an easier tone to the market. Right now the general sense of conditions is that this fuel oil market is not as strong as it was 30 days ago. There is no very defined weakness but stocks are being pressed for sale, shipping instructions are anxiously asked for, there is a sense of uncertainty. Colder weather might help some but our weather has been seasonable this fall, fully as cool as the average season. Then there is the threat of excessive supplies of heavy fuels. Sales of fuel oil have been made by some Texas refiners which at the present freights net them not to exceed 5 cents a barrel. They are expecting to secure a rebate on their freight payments and with each shipment file a claim. This is one of the factors which unsettle the market right now, and gives the sense of some weakening in the situation which results in shading of prices. With many refiners quoting direct and naming fairly close figures the tank car dealers are striving to hold their trade by purchasing in quantities at the best price possible and working on a very close margin. Some 18-22 low sulphur fuel oil refined by a refiner who has a reputation for quality sold at 55 cents a barrel. The same gravity of oil from West Teas crude is selling at 50 cents and under competition down to 47½ cents and possibly lower to some buyers. Refiners who want to sell must meet such prices as they are quite widely quoted. The condition may be temporary and due to the outside influences which will soon be settled so far as any effect on the oil business is concerned. In the meantime for the heavy fuels it is a waiting market and this is always more or less an easier spot market.

### Lubs Featureless

Lubricating oils are simply moving along in routine fashion with no particular feature. Bright stocks are firmly held by refiners but neutrals are not doing so well. Some price concessions have been made to move stocks or meet competition. Motor oils are in fair demand with a steady consumption of the seasonable kind but dealers are ordering from hand to mouth. The industrial demand is steady but buying is rather of a cautious nature. Wax is accumulating with some refiners owing to the lack of demand but stocks are very light and the market is strong.

The distributers still report they are doing a good business and the larger companies who cover a wide territory and are not so much under the influence of local conditions report their station sales are very good. The total volume of gasoline sales is well ahead of last year and the trade expects them to continue so. The excitement over the Q.D.A., has about died out. No announcement has been made regarding the P.D.I., or the Triple A contracts and the old ones are being allowed to run along. No new ones are being signed. Occasionally some confusion is caused by misunderstanding regarding one of these contracts which are exclusive contracts involving the control of the station through lease or by agreement. They are confused with the straight sales contract with a discount for quantity known as the Q.D.A. There have been no tank wagon changes in the larger towns but at a number of smaller points the service station price has been reduced to the level of the tank wagon price on account of local competition. Locally there is still a considerable number of cut price sellers and some regular dealers worry a little fearing the longer continuance of the cutting of prices may result in a drop in the local service station price to the tank wagon level. The larger companies must realize that in such a large city as Chicago, with so many in the business who really should never have become distributers, there will always be some price cutting. The quality of their gasoline is seldom really good and they must appeal to a constantly changing list of buyers. Perhaps some time price cutting will be done away with in this city but if education in business methods is as some have suggested the real remedy there are many who are still in the lowest grade.

## DESIGNS APPARATUS FOR FRACTIONATION STUDY

(Continued from Page 121)

obtaining 70 per cent overhead distillate, 20 per cent off the tower, and 10 per cent bottoms. There is an overlap of 39 degrees Fahrenheit between the overhead tower streams amounting to 8 per cent of the tower stream, and an overlap of 13 degrees Fahrenheit between the tower and bottoms streams amounting to 3 per cent of the bottoms. Although these comparatively narrow overlaps indicate fairly satisfactory fractionation, the lower end of the tower-stream curve shows that the reboiler did not remove all the light ends from this stream. Because approximately three-fourths of the charge was going overhead, this result is an indication that the reboiler was being worked beyond its capacity.

The effectiveness of the tower in fractionating crude oil is shown in Figure 9. A sample of slightly weathered crude from the Tonkawa-Thomas Field, Oklahoma, was charged at the rate of 0.650 gallons per hour, yielding 28 per cent overhead distillate, 20 per cent off the tower, and 52 per cent bottoms. The Engler distillation curves of the products, with an Engler distillation curve of the crude (as far as it was possible to distill these without cracking) are shown in Figure 9. There is an overlap of 13 degrees Fahrenheit between the overhead and tower streams equal to 2½ per cent of the tower stream, and an overlap of 18 degrees Fahrenheit between the tower stream and bottoms equal to less than 1 per cent of the bottoms.

### Conclusion

Experimental work with this small tower indicates that very sharp and definite separations can be obtained, and that the reboilers are exceptionally effective, as one reboiler can replace four or five bubble trays. (In the first tower 12 trays were needed for efficient fractionation, whereas in the second tower 7 trays and a reboiler gave almost as good results.) Many interesting problems are suggested by the experimental data already obtained, but much additional work must be done before these problems can be adequately discussed.

## EXPORT BUYING HELPS THE EASTERN MARKET

(Continued from Page 119)

with the market showing some softness at the Gulf, refiners in this area are content to let the market remain at its present price. Export buyers are taking these oils in but a moderate way, and this is another factor which has tended to soften the undertone.

Industrial lubs are still rather routine. The resumption of operations in the fine cotton goods mills at New Bedford has been general, but the mills are still far from full time. Other sections of the New England textile trade also continue to work on a curtailed scale, and this is being reflected in the textile oils moving. In other consuming industries conditions are as favorable as could be expected at this season, refiners getting a good movement of lubs against term contracts which have until the end of the year to run. Keen competition is looked for in lining up some of the large contracts for 1929, activity along this line being looked for.

### Paraffin

The market has taken a turn for the better, and prices are in firmer position. Spot stocks of 135-137 a.m.p. continue short, and the market remains steady at 7¾ cents a pound. Quotations on other grades quoted, however, are an eighth cent higher, as follows: 120-122 a.m.p. 5⅝ cents per pound; 125-127 a.m.p. 5⅞ cents; 130-132 a.m.p. 6⅝ cents, and 133-135 a.m.p. 7⅜ cents a pound.

There has been considerable buying on the part of dealers covering short sales, and this has aided in bringing about the market recovery. In addition to this, refiners have revised their price views upward in many instances, and are no longer entertaining the low bids at which they had been booking business previously.

An encouraging development is the increase in the demand for wax for later positions. Buyers are endeavoring to cover through December in some instances, but refiners are going rather slowly in selling futures, evidently under the belief that further advances in quotations are in prospect.

Export buyers have come into the market for larger quantities. While a good deal of this buying is centering on crude scale, the refined grades have been getting a fair share of the demand. The revival in export inquiry appears general, not being confined to any particular country.

Domestic consumers have likewise been broadening their operations. The hand-to-mouth policy which many have pursued during the past several weeks, during which time it appeared a general price break was imminent, has given way to normal buying operations. Consumers in some cases permitted their stocks of wax on hand to run below the safety point, and have been placing fair sized orders in the spot market to round out their reserve holdings.

Reports from refineries indicate production is still relatively light, with stocks on hand at the refineries by no means excessive.

### Imports

Imports of crude and refined oils at the principal United States ports for the week ended October 20 totaled 1,743,000 bbls., a daily average of 249,000 bbls., compared with 1,540,000 bbls., a daily average of 220,000 bbls. for the week ended October 13 and a daily average of 241,750 bbls. for the four weeks ended October 20.

| | (Bbls. of 42 gals.) |
|---|---|
| At Atlantic Coast Ports— | |
| Baltimore | 153,000 |
| Boston | 72,000 |
| New York | 912,000 |
| Philadelph'a | 169,000 |
| Others | 70,000 |
| Total | 1,376,000 |
| Daily average | 196,571 |
| At Gulf Coast Ports— | |
| New Orleans and Baton Rouge | 257,000 |
| Port Arthur and Sabine district | 60,000 |
| Tampa | 50,000 |
| Total | 367,000 |
| Daily average | 52,429 |
| At all United States Ports— | |
| Total | 1,743,000 |
| Daily average | 249,000 |
| Daily average four weeks ended | 241,750 |

Included in the imports of crude oil at New York for the week ended October 20 were the following shipments:

To Standard Oil Co. of New Jersey, 75,000 bbls. on the Matinicock from Tampico and 100,000 bbls. on the Gedania from Mamomal.

To Utility Oil Corp., 44,400 bbls. on the Republic from Point-a-Pierre.

To Pan American Petroleum & Transport Corp., 90,700 bbls. on the Cerra Azul from Aruba; 87,400 bbls. on the R. W. Stewart from Aruba, and 41,450 bbls. on the Herbert G. Wylie from Aruba.

To Anglo-Mexican Petroleum Co., 45,900 bbls. on the San Antonio from Curacao.

To Mexican Atlas Petroleum Corp., 50,000 bbls. on the Vaba from Tampico.

To Warner-Quinlan Co., 73,250 bbls. on the Dungannon from Las Piedras.

To Tide Water Oil Co., 95,000 bbls. on the Axtell J. Byles from Las Piedras.

To Gulf Refining Co., 75,000 bbls. on the Gulfpoint from Las Piedras and 75,000 bbls. on the Gulfstate from Las Piedras.

### Exports

Heavier export gasoline buying developed, details of which appear in an earlier part of this report.

Kerosene has moved in good volume into export channels and markets are in steady position. Price shading by Texas refiners during the past fortnight has given export operators at the Gulf a wider margin to work on, and consequently they have been able to meet competition and have speeded up their sales.

Export operators have come back into the paraffin wax market in good volume, and sales were considerably swelled with the business which had been withheld during the previous fortnight in the expectation of a break.

Lubricating oil export buyers are not yet convinced that the present price basis can be maintained, and there has been relatively little buying of any grades for export. Refiners show no disposition to meet some of the extreme low price ideas of export buyers as illustrated by some of the bids which are now being made.

Other refined products have shown little export activity.

### Petroleum Exports

The following table shows principal exports of petroleum and refined petroleum products from New York during the past three weeks (all figures in gallons unless otherwise noted):

| | Week ended | | |
|---|---|---|---|
| | Oct. 19 | Oct. 12 | Oct. 5 |
| Gasoline | 69,600 | 572,300 | 1,063,600 |
| Naphtha | 3,917,800 | 1,320,200 | 2,435,100 |
| Kerosene | 40,000 | 1,122,700 | 171,300 |
| Fuel oil | 18,100 | 7,400 | 17,200 |
| Lubricating oil | 986,400 | 2,765,600 | 3,085,800 |
| Petroleum, ref'd. | 1,031,000 | 1,487,700 | 2,526,300 |
| | Pounds | | |
| Petrolatum | 68,000 | 239,600 | 102,300 |
| Paraffin wax | 3,118,100 | 1,489,300 | 1,677,800 |
| Refined | ..... | ..... | ..... |
| Scale | 275,000 | 692,800 | 916,300 |
| Lubricat'g grease | 7,416,400 | 966,700 | 1,060,600 |

Among the larger shipments reported during the week ended October 19 as clearing from New York were the following: Lubricating grease, 6,281,100 pounds on the Anaconda for Rotterdam; 230,000 pounds on the Bellepline for Rotterdam; 96,800 pounds on the Hellen for Marseilles; 170,600 pounds on the London Mariner for London. Paraffin wax: 138,000 pounds on the Arabic for Antwerp; 187,800 pounds on the Boston City for Bristol; 107,800 pounds on the Silverbeech for Shanghai; 246,300 pounds on the Arabic for Antwerp; 655,200 pounds on the Clara for Venice; 257,400 pounds on the Laura C for Venice; 114,600 pounds on the Roma for Genoa; 223,000 pounds on the Livenza for Leghorn; 223,000 pounds, same steamer, for Genoa. Petroleum, refined: 600,000 gallons on the Lowther Castle for Shanghai; 150,000 gallons on the Troubador for Rosario. Naphtha: 3,381,200 gallons on the Joseph Seep for Vado and/or Leghorn; 222,500 gallons on the Troubador for Rosario, and 223,500 gallons on the Liguria for Montevideo. Lubricating oils: 40,700 gallons on the Livenza for Genoa; 38,600 gallons on the Hellenic for Sydney; 36,200 gallons on the Laconia for Liverpool; 39,200 gallons on the Troubador for Rio Grande; 64,200 gallons on the Troubador for Rio de Janeiro; 45,000 gallons on the Hellen for Marseilles.

Export operators are closely following reports of the progress being made in the organization of the oil trade export corporation. It is generally believed that after the leading companies which took the initiative in the campaign to organize the export combine have succeeded in progressing to the point of actual organization other interests in the export trade will be invited to participate, the idea being that the combine cannot become effective unless it is representative of the entire American petroleum industry.

Developments in export markets indicate that export totals for refined products during the closing half of the month will be much larger than for the first half, owing to heavy buying of gasoline by Europe. This will not be fully reflected in the figures covering exports

from New York, in as much as the bulk of the movement this week has been out of the Gulf.

**California Oil Receipts**

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended October 20 totaled 291,000 bbls., a daily average of 41,571 bbls., against 377,000 bbls., a daily average of 53,857 bbls. for the week ended October 13 and a daily average of 48,286 bbls. for the four weeks ended October 20.

| At Atlantic Coast Ports— | (Bbls. of 42 gals.) |
|---|---|
| Baltimore | 216,000 |
| New York | 75,000 |
| Total | 291,000 |
| Daily average | 41,571 |

Distribution of total California oil receipts is as follows:

| | |
|---|---|
| Gasoline | 291,000 |

The California gasoline market has exhibited continued strength. Refiners were asking 8½ cents at California refinery terminals, and eastern buyers were not inclined to operate extensively at this level until the future of the gasoline market in East Coast territory shapes itself more definitely. In the meantime, however, the movement of gasoline eastward by integrated companies with California subsidiaries continues to run into large totals. The tanker Dixie Arrow cleared Los Angeles last week for Baltimore with a cargo of 96,000 bbls. of gasoline.

There has been a fair inquiry for tankers for the intercoastal trade, and this is expected to presage a larger movement of gasoline eastward. Large quantities of California motor fuel are regularly used by eastern refiners in their premium fuel blends and the advent of colder weather in the East has already been reflected by increasing consumption of these special fuels.

## OIL COMPANY EARNINGS SHOWING IMPROVEMENT

(Continued from Page 129)

doubled its cash resources, which stand now at about $16,000,000.

In view of the foregoing, it is believed in Wall Street that the funds received from the sale of the treasury stock will be used principally for the reduction of funded debt, although it is likewise possible that the new funds may be used to acquire other properties or to finance a merger.

At the beginning of 1928, Sinclair Consolidated Oil Corp. had outstanding $20,000,000 of three-year 6 per cent bonds due September 1, 1930. Under the terms of issue, these may be called any time up to March 1, 1929, at 101. In addition, the corporation had outstanding $22,831,500 series "B" 6½ per cent bonds due in 1938, and $44,057,500 series "A" 7 per cent due in 1938. These issues can be called in whole or in part at 105 at any time in the next four years.

At last reports the corporation had in its treasury, authorized but unissued, 1,240,520 shares of stock. Should all of these unissued shares be involved in the currently reported sale at about the present market, the corporation would receive about $35,000,000 in return.

Should the management of the company plan to use the moneys derived from the sale of the treasury stock for reducing the funded debt, there would be a material reduction in the sinking fund and annual interest charges.

**B.O.C. Anglo-Persian**

The Burmah Oil Co., Ltd., has formed the B.O.C. Anglo-Persian Share Trust, a holding company. The new company will have outstanding 700,001 shares of £1 par and will be authorized to exchange 700,000 of its shares for an equal number of Anglo-Persian Oil, now held by the Burmah Oil Co., Ltd.

Organization of the holding company is to make effective Burmah Oil's recent purchase of 833,333 shares of Shell Transport & Trading Co. Burmah has issued £4,000,000 in 5½ per cent secured debenture stock, callable November 1, 1953, at par, or at 102 per cent on or after January 31, 1934. This stock is being offered to Burmah holders, the funds derived to be used for financing most of the purchase of the Shell Transport & Trading shares contracted for.

Upon completion of the transaction, Burmah will hold 1,000,000 Shell Transport & Trading Co. ordinary shares, the 833,333 shares recently acquired carrying one-for-five subscription rights, which may be exercised in 1930. These 1,000,000 shares will be of a total of 24,545,000 shares of Shell which will be outstanding following the issuance of new stock.

The Burmah-Shell deal is part of the close accord which has been attained by Royal Dutch, Shell, Anglo-Persian, and Burmah Oil during the past several months.

**Texas Pacific C. & O.**

Texas Pacific Coal & Oil Co. reports for quarter ended September 30, 1928, profit of $555,789 after expenses, etc., but before deprecation and depletion, comparing with $323,070 in preceding quarter and $561,681 in third quarter of 1927. Profit for first nine months of 1928 totaled $1,272,939 before depreciation and depletion, against $1,863,553 in first nine months of previous year. Outstanding stock amounts to 844,804 shares of $10 par.

**Skelly Oil**

Skelly Oil Co. and subsidiaries report for quarter ended September 30, 1928, net profit of $2,006,063 after interest, depreciation, depletion and federal taxes, equivalent to $1.83 a share (par $25) earned on 1,093,684 shares of stock. This compares with $387,259, or 35 cents a share in preceding quarter and $769,938, or 70 cents a share in third quarter of 1927.

Net profit for first nine months of 1928 totaled $2,462,407 after above charges, equal to $2.25 a share, comparing with $1,591,528, or $1.45 a share in first nine months of preceding year.

**Simms Petroleum**

Simms Petroleum Co. and subsidiaries report for quarter ended September 30, 1928, net profit of $269,093 after interest, taxes, drilling costs, depreciation, depletion, etc., equivalent to 39 cents a share (par $10) earned on 690,118 shares of stock. This compares with net loss of $41,832 in preceding quarter and net profit of $234,200, equal to 34 cents a share earned on 689,789 shares in third quarter of 1927.

Net profit for first nine months of 1928, amounted to $59,250 after above charges, equal to 9 cents a share on 690,118 shares, compared with net profit of $22,591 or 3 cents a share on 689,789 shares in first nine months of preceding year.

**Mid-Continent Petroleum**

Mid-Continent Petroleum Corp. and subsidiaries report for quarter ended September 30, 1928, profit of $3,992,454 after interest, amortization, abandoned and surrendered leaseholds, but before depreciation, depletion and federal taxes, comparing with $2,216,275 in preceding quarter and $2,558,402 in third quarter of 1927.

Profit for first nine months of 1928, totaled $7,241,119 before depreciation, depletion and federal taxes against $7,443,357 in first nine months of preceding year. Stock outstanding consists of 62,944 shares of 7 per cent preferred and 1,410,000 shares of no-par common.

**Marland Oil**

Marland Oil Co. and subsidiaries report for quarter ended September 30, 1928, net profit of $569,367 after interest, depreciation, depletion, surrendered leases and reserves for intangible drilling, etc., equivalent to 24 cents a share earned on 2,317,233 shares of no-par stock. This compares with net loss of $41,159 in preceding quarter and net loss of $1,040,311 in third quarter of 1927.

Net loss for nine months ended September 30 was $1,348,784 after above charges, compared with net loss of $2,967,119 in first nine months of preceding year.

**Phillips Petroleum**

Phillips Petroleum Co. and subsidiaries report for quarter ended September 30, 1928, profit of $5,846,156 after charges and federal taxes but before depreciation and depletion, comparing with profit of $3,414,886 in preceding quarter and $4,014,286 in third quarter of 1927.

Profit for first nine months of 1928 totaled $12,366,133 before depreciation and depletion, against $15,643,159 in first nine months of previous year. Outstanding stock consists of 2,388,140 no-par shares.

On September 30, last, company had cash, call loans and marketable securities amounting to $14,207,322 not including $4,864,000 of its own debentures and stock repurchased and held in treasury for investment.

**Pierce Petroleum**

Pierce Petroleum Corp. and subsidiaries report for quarter ended September 30, 1928, net profit of $424,225 after expenses, depreciation, interest, etc., equivalent after allowing for dividend requirements on 11,500 no-par shares of $6 new preferred stock to 16 cents a share earned on 2,500,000 no-par shares of common. This compares with $401,723 or 16 cents a share in preceding quarter and $225,244 or 9 cents a share in third quarter of 1927.

Net profit for first nine months of 1928 totaled $791,683 after above charges, equal to 31 cents a share on common, against $152,304 or 6 cents a share in first nine months of preceding year.

Pierce Oil Corp., the holding company, had no income for the nine months ended September 30, 1928.

**Italo Petroleum Corp.**

Stockholders of Italo Petroleum Corp. of America approved proposal to exchange present $1 par preferred and common shares for new no-par preferred and common in the ratio of 10 per cent shares for one of the new. New preferred will be convertible into common.

**Mexican Petroleum**

Mexican Petroleum Co., Ltd., of Delaware, and subsidiary companies report for six months ended June 30, 1928, profit of $4,144,758 after depreciation, depletion, amortization and intangible development costs, but before federal taxes, comparing with $10,789,252 in first half of 1927. Stock outstanding on December 31, 1927, consisted of 120,000 shares of 8 per cent preferred stock and 457,300 shares of common stock both $100 par.

**Transcontinental Oil**

Transcontinental Oil Co. reports for quarter ended September 30, 1928, profit of $825,066 after interest, depreciation, depletion, abandoned leases, etc., but before federal taxes, comparing with profit of $493,612 in preceding quarter and net loss of $224,037 in third quarter of 1927. Profit for first nine months of 1928 totaled $1,248,032 before federal taxes, against net loss of $83,350 in first nine months of previous year. Stock outstanding amounts to 157,500 shares of 7 per cent preferred and 3,842,029 no-par shares of common.

**Beacon Oil**

Beacon Oil Co. reports for quarter ended September 30, 1928, profit of $945,407 after interest and depreciation but before federal taxes, comparing with $550,387 in preceding quarter and $192,309 in third quarter of 1927. For first nine months of 1928 profit totaled $1,086,874 before federal taxes, against $432,338 in first nine month of previous year.

**Atlantic Refining**

Consolidated net profit of Atlantic Refining Co. and subsidiaries for quarter ended September 30, 1928, was approximately $6,219,000 after depreciation, depletion, taxes, intangible development costs, etc., equivalent after allowing for dividend requirements on 7 per cent preferred stock, to $11.74 a share (par $100) earned on 500,000 shares of common stock. This compares with $4,332,630 or $7.96 a share on common in preceding quarter and $1,333,000 or $1.96 a share on common in third quarter of 1927.

For first nine months of 1928, net profit totaled $11,908,387 after above charges, equal to $21.71 a share on common against net loss of $144,419 in first nine months of previous year.

**Amerada Corp.**

Report of Amerada corporation and subsidiaries for quarter ended September 30, 1928, shows net income of $577,563 after depreciation, depletion and Federal taxes, equivalent to 63 cents a share earned on 922,075 outstanding no-par shares of stock. This compares with $498,014 or 54 cents a share in preceding quarter and $763,273 or 82 cents a share in third quarter of 1927.

Net income for first nine months of 1928, totaled $1,635,471 after above charges, equal to $1.77 a share comparing with $2,853,702 or $3.09 a share in first nine months of previous year.

**OIL BONDS ON THE NEW YORK CURB**

**Quotations Compiled by Franc'a, Bro. & Co., Members New York Stock Exchange Kennedy. Bldg., Tulsa, Okla.**

| Amount outstanding | Company— | Date | Pct. | Int. | —Week ended October 26— Sales | High | Low | Close |
|---|---|---|---|---|---|---|---|---|
| 11,603,000 | American Nat. Gas Co. | Oct. 1942 | 6½ | A&O | No sales. | | | |
| 3,000,000 | Beacon Oil Co. | Nov. 1936 | 6 | M&N | 10,800 | 112½ | 110 | 110½ |
| 18,900,000 | Cities Service deb. | Jan. 1966 | 6 | M&N | 600 | 103⅝ | 103⅝ | 103⅝ |
| 15,000,000 | Cities Serv. refunding deb. | Jan. 1966 | 5 | M&S | 50,000 | 94 | 92⅝ | 93¾ |
| 24,843,700 | Cities Service Gas Co. | May 1942 | 5½ | M&N | 6,000 | 93⅝ | 93½ | 93½ |
| 12,000,000 | Cities Service Gas P. L. Co. | Jan. 1943 | 6 | J&J | 2,800 | 99⅝ | 99 | 99⅝ |
| 12,000,000 | Continental Oil Co. | Nov. 1937 | 5¼ | M&N | 800 | 96 | 95 | 96 |
| 3,000,000 | Dixie Gulf Gas Co. A | Sept. 1937 | 6½ | M&S | 1,800 | 92 | 91 | 92 |
| 18,000,000 | Empire Oil & Ref. Co. | Apr. 1942 | 5½ | A&O | 1,400 | 92½ | 92¼ | 92¼ |
| 3,877,100 | Galena Signal Oil Co. | Apr. 1930 | 7 | A&O | 400 | 100⅝ | 100⅝ | 100⅝ |
| 20,904,000 | Gulf Oil of Pa. | Dec. 1937 | 5 | J&D | 600 | 100⅝ | 100½ | 100½ |
| 12,000,000 | Gulf Oil of Pa. debs. | Feb. 1947 | 5 | F&A | 1,900 | 100½ | 100½ | 100½ |
| 4,000,000 | Houston Gulf Gas | Apr. 1943 | 6 | A&O | 1,800 | 96 | 95½ | 95⅞ |
| 4,000,000 | Houston Gulf Gas | Apr. 1943 | 6½ | A&O | 4,000 | 95 | 94½ | 94⅝ |
| 6,339,000 | Independent Oil & Gas | Mar. 1939 | 6 | M&S | 29,000 | 109 | 103¾ | 107 |
| 15,000,000 | Lone Star Gas Co. | May 1942 | 5 | M&N | 1,000 | 98⅝ | 98 | 98⅝ |
| 11,650,000 | Richfield Oil Co. | Sept. 1941 | 6 | M&S | 200 | 131 | 130½ | 130½ |
| 1,427,000 | Richfield Oil Co. | Jan. 1931 | 5½ | J&L | 400 | 103 | 102½ | 102⅝ |
| 9,733,000 | Sun Oil Co. | 1939 | 5¾ | M&S | 2,800 | 101¼ | 100½ | 101¼ |
| 4,000,000 | Transcontinental Oil Co. | Apr. 1930 | 7 | A&O | No sales. | | | |
| 2,500,000 | Warner-Quinlan Oil Co. | 1942 | 6 | A&O | No sales. | | | |

**TWENTY REPRESENTATIVE STOCKS**

The Oil and Gas Journal weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb was as follows:

| | | | | | |
|---|---|---|---|---|---|
| Oct. 29 | 75.02 | Sept. 8 | 66.76 | July 23 | 64.13 |
| Oct. 20 | 70.05 | Sept. 1 | 65.96 | July 16 | 64.51 |
| Oct. 13 | 68.03 | Aug. 27 | 65.79 | July 9 | 65.38 |
| Oct. 6 | 67.55 | Aug. 20 | 65.42 | July 2 | 64.17 |
| Sept. 29 | 67.93 | Aug. 13 | 65.16 | June 25 | 62.88 |
| Sept. 22 | 67.12 | Aug. 6 | 66.16 | June 18 | 62.95 |
| Sept. 15 | 67.96 | July 30 | 64.68 | June 11 | 61.68 |

## A PRACTICAL SUGGESTION

(Continued from Page 123)

problem might serve best to show the usefulness of the chart. The problem may call for the volume of gasoline vapors, expressed in cubic feet per pound, to pass through a tower where the temperature of the vapors is maintained at 400 degrees Fahrenheit and held at a gauge pressure of 10.3 pounds per square inch.

The average composition of the fraction of natural gasoline may be assumed as being represented by the chemical formula $C_6H_{14}$. The molecular weight then would be 86.1 (M = 86.1).

In solving the equation and arriving at the absolute temperature, the 400 actual temperature is added to the absolute base temperature 460 to get the final absolute temperature of 860 degrees Fahrenheit. In similar manner the gauge pressure of 10.3 pounds when added to the absolute base of 14.7 gives an absolute working pressure of 25 pounds.

$$V = \frac{359}{86.1} \times \frac{860}{460} \times \frac{14.7}{25} = 4.58 \text{ cu. ft. per lb.}$$

This same result may be derived direct from the chart and the example is worked out as shown by the dotted lines. A line drawn from the scale on the left at a point determined by the molecular weight of the vapor to a point on the first scale to the left determined by the

absolute temperature cuts the vertical line A A at some point. From this point on the line A A a line is drawn to a point on the absolute pressure scale on the extreme right, cutting the scale showing the volume in cubic feet per pound. The answer is taken as the point where this scale is cut.

The answer must be considered approximate because of the many indeterminate and variable factors that exist during the actual operation, but as was stated before, the result serves for most practical purposes. Some of the factors which must be taken into consideration are that the vapors are not true gases, and for that reason the gas laws do no fully apply, the temperature and pressure usually vary during the course of the operation, and the molecular weight must be assumed.

Practical suggestions by those connected with the construction and operation of natural gasoline plants are invited. Payment will be made as soon as suggestions are accepted. Address all communications to the Natural Gasoline Department, The Oil and Gas Journal, Tulsa.

## TEXAS PANHANDLE

(Continued from Page 39)

dated Oil Co.'s No. 4 Waggoner-C made 75 bbls. at 1,877-95 feet. Golding Cochran and others' No. 2 Waggoner-G made 105 bbls. at 2,438-43 feet. Kolp's No. 1 Waggoner-E was dry and abandoned at 2,750 feet. Robertson and others' No. 1 Waggoner made 168 bbls. at 1,884-1,905½ feet. Roxana Petroleum Corp.'s No. 1 Milner was dry and abandoned at 2,020 feet. Waggoner Refining Co.'s No. 4 Waggoner-I made 1,500 bbls. at 2,389-2,406 feet.

**Young County**

Allday & Carter's No. 6 Johnson-A made 40 bbls. at 588-98 feet. Johnson's No. 1 Spencer was dry and abandoned at 895 feet. Kennedy and others' No. 4 Johnson made 33 bbls. at 500-08 feet. Kleiner and others' No. 6 Davis was dry and abandoned at 568 feet. Lynch & Whitehill's No. 2 Johnson made 15 bbls. at 482-97 feet. Petroleum Production Co.'s No. 2 Henning made 35 bbls. at 1,089-98 feet. Petroleum Production Co.'s No. 1 Parrish-B was dry and abandoned at 1,135 feet. Prairie Oil & Gas Co.'s No. 2 Campbell made 20 bbls. at 989-95 feet. Reed and others' No. 1 Casey was dry and abandoned at 650 feet. Riggs and others' No. 2 Sweet made 15 bbls. at 519-26 feet. Riggs and others' No. 2 Sweet made 3 bbls. at 529-39 feet. Roberts Oil Corp. and Atlantic Oil Producing Co.'s No. 1 Hamilton was dry and abandoned at 895 feet. White's No. 1 fee was dry and abandoned at 747 feet. Lindsley & Bollin's No. 3 Graham was shot with 60 quarts at 2,061-81 feet and made 25 bbls.

## RANGER DISTRICT

**Brown County**

Cranfill & Reynolds' No. 14 Eubanks made 50 bbls. at 1,212-30 feet. Humble Oil & Refining Co.'s No. 5-A Allen was shot with 4 quarts at 1,115-25 feet and made 25 bbls. Humble Oil & Refining Co.'s No. 6 Byler made 26 bbls. after being shot with 15 quarts at 1,320-27 feet. Moore Oil Corp.'s No. 3 Williams made 1,500,000 feet of gas at 1,212-37 feet. Stanley's No. 1 Lewis was dry and abandoned at 1,342 feet. Valley Oil Co.'s No. 11 Teston was dry and abandoned at 1,210 feet. Williamson and others' No. 5 Eddington location was abandoned. Woodley Petroleum Co.'s No. 5 Armstrong was shot with 25 quarts at 1,174-1,204 feet and made 45 bbls. Its No. 2 Butler was shot with 10 quarts at 1,263-72 feet and was dry and abandoned at 1,308 feet. Amerada Petroleum Corp.'s No. 2 Wise was dry and abandoned at 715 feet. Wakefield and others' No. 1 Wooldridge was dry and abandoned at 1,198 feet.

**Callahan County**

Reiter Foster Oil Corp.'s No. 1 Hatchett made 27 bbls. at 360-65 feet.

**Coleman County**

Barnsdall Oil Corp.'s No. 1 Sacket was dry and abandoned at 2,303 feet. Duncan and others' No. 1 Gray was dry and abandoned at 1,988 feet. Smith and others' No. 2 Brenke was dry and abandoned at 2,960 feet. Texas Natural Oil Co.'s No. 2 Stevens was dry and abandoned at 2,124 feet. Williams Petroleum Co.'s No. 1 West was dry and abandoned at 3,400 feet. Continental Oil Co. and others' No. 1 Overall made 685 bbls. at 2,116-19 feet. Cunningham's No. 8-B Jennings was shot with 15 quarts at 1,-173-93 feet and made 25 bbls.

**Eastland County**

Moore and others' No. 2 Prichard was dry and abandoned at 1,562 feet. States Oil Corp.'s No. 1 Jackson was dry and abandoned at 1,500 feet.

**Erath County**

Eastland Oil Co.'s No. 1 Smith made 23,000,000 feet of gas at 3,284-92 feet, 1,450 pounds rock pressure.

**Parker County**

Lynch's No. 1 McCracken was dry and abandoned at 590 feet.

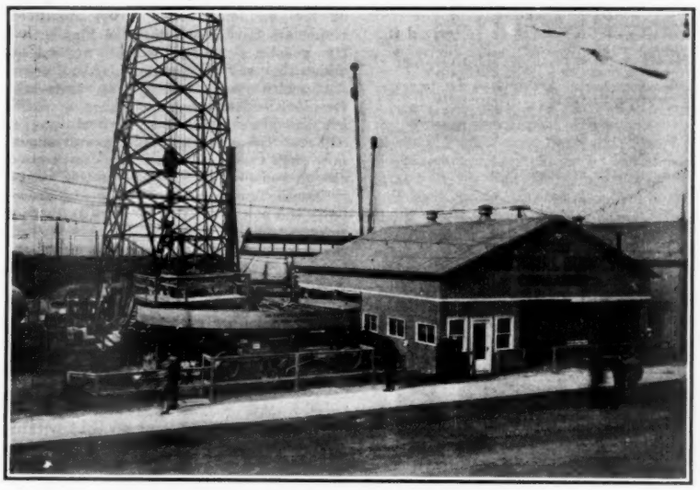
**Palo Pinto County**

Craig & Strong's No. 1 Long location was abandoned.

**Shackelford County**

Mid-Sun Oil Co.'s No. 1 Nail was dry and abandoned at 1,583 feet. Ohio Texas Oil Co.'s No. 8 Matthews made 625 bbls. at 1,111-27 feet. Welsh and others' No. 1 Harvey was dry and abandoned at 1,-716 feet. Wichita Production Co.'s No. 4 Myer made 50 bbls. at 1,005-08 feet.

## NATIONAL SUPPLY CO.'S EXHIBIT AT EXPOSITION



The National Supply Co., whose exhibit at the International Petroleum Exposition did not receive mention in last week's issue of The Oil and Gas Journal, had one of the most practical and impressive displays seen at the big oil show.

The machinery and equipment occupied a large space on the grounds, where the exhibit, tinted in the National blue, was visited by thousands of oil men and others.

A rotary drilling rig in full operation consisted of the following equipment: A 12 by 12 Ajax twin-cylinder, roller-bearing steam engine equipped with Ajax Carson lubricator and Ajax Greenwood throttle valve, Ideal Halliburton control, 7½ R. B. Ideal draw works, No. 12 Ideal rotary machine, Type "J" Straightaway rotary crown block, 9-inch Ideal spring casing hook, 6-inch Type "C" Quad. R. B. manganese sheaves, traveling block, one 14½ by 7½ by 18 Ideal slush pump, one 125-horsepower Broderick boiler, Hill & Foster automatic cathead, Martin-Loomis weight indicator, 1⅛-inch Roebling blue center wire line, Columbian Manila cat line, Ideal Al-oy rotary chain, Ideal rotary tool joints, Ideal electric steel bits, and National Tube S.I.U.E. drill pipe.

The auxiliary rotary drilling equipment was composed of the following: A 75-125-horsepower Type A Ideal electric motor drilling reduction gear, with Westinghouse motor and control; a 7¼ by 14 geared slush pump with Dayton cog rope drive, and 150-horsepower Westinghouse motor, with control.

Other unit displays in the big exhibit included Type "B" National steel pulling machine; 3-B National steel pumping machine; Type "A" oval gear pumping attachments, with steel pitman and stirrups; Type "A" Rex beam hanger; Type "C" polish rod grip; Type "B" stuffing box; 15-C 30-foot wheel, 36-inch stroke, National band wheel pumping power; Type "D" National belt tightener; one 20-50 Ideal single reduction Type "A" reduction gear, with 20-50 Westinghouse motor and control, operating a No. 7 geared pumping power, and a 5 by 10 geared pump; 13 by 14 inclosed, single-cylinder Ajax drilling engine; Type "J" and Type "P" Doreco gas burner, and Type "M" Doreco oil burner; No. 6 8 by 4 by 12 Cameron boiler feed pump; 9-inch Ideal automatic casing spider; 9-inch Ideal automatic casing elevator; Double Seal piston ring demonstration; National Titan sucker rods; National Titan pull rods; EPCO working barrel; 40-horsepower, two-cycle, inclosed Superior gas engine, direct connected through a Type "K" Ideal reverse gear to a National Type "C" 1-inch double reduction pumping gear; Type "B-J" National tubing hoist and Type "B-F" National tubing hoist; 45-horsepower, two-cycle Superior, direct-driven compressor gas engine; 90-horsepower, two-cycle Superior twin-cylinder, direct-connected gas engine compressor.

O. T. Dawson, of Tulsa, division manager; H. G. Trimble, Toledo, Ohio, sales manager; M. P. Archer, Toledo, Ohio, chief engineer; C. A. McCollum, Tulsa, field engineer; and H. E. Heywood, Tulsa, sales manager, with a force of assistants, were in daily attendance at the exhibit, and all of the officials of the company attended the exposition and spent a portion of their time at the exhibit renewing acquaintances with oil men from many fields.

## WEST TEXAS FIELDS

(Continued from Page 40)

Smith, 2,066 feet from north and 2,250 feet from west of Section 36, Block 194, G.C.&S.F. Survey, topped the lime at 1,-285 feet and had an initial production of 535 bbls. hourly at 1,382-1,440 feet. Mid-Kansas Oil & Gas Co.'s No. 3 Smith, 250 feet from north and 1,330 feet from west of Section 31, Block 194, topped the lime at 1,510 feet, topped the pay at 1,490 feet, was drilled to a total depth of 1,735 feet and had an initial production of 1,000 bbls. hourly. Its No. 3-F Yates, 830 feet from south and 3,460 feet from west of Section 63, Block 1, I.&G.N.R.R. Survey, topped the lime at 1,190 feet, topped the pay at 1,175 feet, was drilled to a total depth of 1,290 feet and had an initial production of 25 bbls. daily, 12 per cent water. Its No. 4-G Yates, 871 feet from most easterly east line of vacancy strip and 1,448 feet from south line of Runnels County School Land, Section 34½, topped the pay at 1,330 feet and made 130 bbls. at 1,334 feet. Olean Petroleum Co.'s No. 1 Arthur Harral was dry and abandoned at 3,303 feet.

**Runnels County**

Miles Oil Co.'s No. 1 Lawhorn, 330 feet from north and east of Section 68, T.&N.O. Survey, was dry and abandoned at 2,450 feet. Vacuum Oil Co.'s No. 3 McMillan, located 561 feet east of No. 1, Domingo Diaz Survey, made 325 bbls. at 2,512-13 feet.

**Sterling County**

Zoch and others' No. 1 Reed, located in CNL of Section 15, Block 30, was dry and abandoned at 3,015 feet.

**Tom Green County**

Lone Eagle Oil Co.'s No. 1 Sharp was temporarily abandoned.

**Upton County**

Humble Oil & Refining Co.'s No. 9 Ricker, 5,574 feet from north and 2,271 feet from west of Section 5, M. S. Denton Survey, topped the salt at 640 feet, topped the lime at 2,155 feet and was dry and abandoned at 2,955 feet.

**Winkler County**

Atlantic Oil Producing Co.'s No. 3-B Hendricks, 1,320 feet north and 1,650 feet east of Section 44, Block 26, topped the lime at 2,740 feet, topped the pay at 2,827-55 feet, was drilled to a total depth of 3,040 feet and had an initial production of 800 bbls. daily. Its No. 2-C Hendricks, 990 feet south, 330 feet west of NE cor., Section 40, Block B-5, was drilled to a total depth of 3,220 feet, was plugged back to 2,660 feet, drilling out to 2,672 feet flow. Empire Gas & Fuel Co.'s No. 1 Daugherty, 990 feet south, 1,640 feet west of NE cor., Section 3, Block 74, topped the lime at 2,-694 feet, had a gas show at 2,810-30 feet, topped the pay at 3,140 feet, and made 130 bbls. hourly, 10,000,000 feet of gas. Gulf Production Co.'s No. 29 Hendricks, 1,320 feet north and 990 feet east of SW cor., Section 45, Block 25, topped the lime at 2,228 feet and had an initial production of 16,035 bbls. daily at 2,575-2,645 feet. Independent Oil & Gas Co.'s No. 2 McCabe, 2,310 feet north and 990 feet west of SE cor., Section 36, Block B-5, had an initial production of 50 bbls. daily at 3,062 feet. Marland Oil Co.'s No. 2-B Hendricks, 990 feet south and west of NE cor., Section 34, Block 26, topped the lime at 2,407 feet, and had an initial production of 40 bbls. hourly at 2,838 feet. The location was abandoned on Marland Oil Co.'s No. 3-B Hendricks. Murchison Oil Co.'s No. 1, located 1,650 feet south and 990 feet west, Section 34, Block 26, topped the lime at 2,452 feet, topped the pay at 2,760 feet, had an initial production of 600 bbls. daily and was drilled to a total depth of 2,875 feet. Pure Oil Co.'s No. 2 Grisham-Hunter made 500 bbls. pinched at 2,675-2,965 feet and made 3,-500 bbls., 65 per cent water, on later test. Richardson and others' No. 1 Stockton had an initial production of 2,110 bbls. at 2,805-2,973 feet. Roxana-The Texas Company's No. 1-E made 94 bbls. daily at 2,863-3,220 feet. Skelly Oil Co.'s No. 1-B Hendricks, located 2,200 feet from north and 1,650 feet west of Section 39, Block 26, was drilled to a total depth of 3,240 feet, plugged back to 3,-165 feet and had an initial production of 10 bbls. per day. Southern Crude Oil Purchasing Co.'s No. 24 Hendricks T-88-M, located 2,200 feet north and 330 feet east of SW cor., Section 33, Block 26, topped the lime at 2,390 feet, had a gas show at 2,549 feet, topped the pay at 2,-828-30 feet and had an initial production of 150 bbls. hourly. Its No. 1 T-88-N Hendricks, 440 feet south and 1,650 feet west of NE cor., Section 28, Block 26, topped the lime at 2,515 feet, topped the pay at 2,813 feet, and flowed 50 bbls. hourly at 2,817 feet. Its No. 2 T-88-N, Section 28, Block 25, topped the lime at 2,483 feet, has a gas show at 2,660 feet, topped the pay at 2,850 feet, drilled to a total depth of 2,868 feet, and had an initial production of 900 bbls.

daily. The location was abandoned on its No. 4 Hendricks T-89-A, located in Section 35, Block B-5. Its No. 1 Hendricks T-264, topped the lime at 2,859 feet, drilled to a total depth of 3,179 feet, plugged back to 3,100 feet and was dry and abandoned.

**PECOS COUNTY**
**Week Ended October 23**

| Company and lease— | Wells | Bbls. |
|---|---|---|
| California: | | |
| Yates, Lease 1 | 17 | 6,345 |
| Smith, Lease 1, Sec. 37 | 3 | 422 |
| Smith, Lease 1, Sec. 23 | 2 | 840 |
| Smith, Lease 2 | 2 | 230 |
| Smith, Lease 3 | 12 | 1,632 |
| Tippett, Lease 1 | 1 | 27 |
| Cosby Drilling Co.: | | |
| M. A. Smith | 1 | 71 |
| Gulf Prod. Co.: | | |
| All leases | 28 | 9,755 |
| Humble O. & R. Co.: | | |
| M. A. Smith | 10 | 1,367 |
| Smith-B | 5 | 681 |
| Kirby Pet. Co.: | | |
| J. H. Tippett | 1 | 42 |
| Kirby Pet. & Edson: | | |
| J. H. Tippett | 1 | 196 |
| Marland Oil Co.: | | |
| Yates-A | 16 | 572 |
| Matador Oil Co.: | | |
| Smith | 2 | 0 |
| Mazda & Savoy: | | |
| Smith | 3 | 193 |
| McMan Oil & Gas Co.: | | |
| Smith-A | 1 | 106 |
| Smith-B | 1 | 988 |
| Smith-C | 1 | 151 |
| J. H. Tippett | 3 | 266 |
| McMan & Yates: | | |
| Yates | 17 | 3,125 |
| Mid-Kansas & Transcontinental: | | |
| Yates-A | 24 | 10,389 |
| Yates-B | 25 | 4,318 |
| Yates-C | 8 | 3,105 |
| Yates-D | 6 | 7,022 |
| Yates-E | 1 | 130 |
| Yates-F | 3 | 530 |
| Yates-G | 4 | 1,116 |
| Yates-H | 6 | 4,834 |
| Smith | 2 | 1,038 |
| Smith-Taylor | 18 | 2,953 |
| Oil Operators Trust:: | | |
| Pecos River | 7 | 750 |
| Phillips Pet. Co.: | | |
| Smith | 1 | 85 |
| Red Bank Oil Co.: | | |
| Smith | 3 | 144 |
| Roxana Pet. Corp.: | | |
| Tippett | 10 | 1,892 |
| Smith | 9 | 1,074 |
| Smith-B | 1 | 179 |
| Smith-D | 1 | 562 |
| Simms Oil Co.: | | |
| Smith | 7 | 3,704 |
| Skelly Oil Co.: | | |
| Tippett | 1 | 102 |
| Texon Oil & Land: | | |
| Yates | 2 | 0 |
| Total Yates Field | 264 | 70,810 |

**WINKLER COUNTY**
**Week Ending October 23**

| Company, farm, section, block— | Wells | Prod. | Wells Drg. (*) | Loc. Rigs (*) |
|---|---|---|---|---|
| Amerada Pet. Co.— | | | | |
| Cowden, 3, B-12 | 1 | 442 | 1 | 2 |
| Atlantic O. P. Co.: | | | | |
| Hendricks-A, 34, B-5 | 8 | 1,987 | 3 | 0 |
| Hendricks-B, 44, 26 | 3 | 905 | | |
| Hendricks-D, 29, B-5 | 8 | 2,872 | | |
| Hendricks-E, 41, B-5 | 3 | 1,516 | | |
| Hendricks-G, 29, B-5 | 5 | 3,138 | | |
| Atlantic & Collett: | | | | |
| Hendricks-F, 46, 26 | 12 | 7,471 | | |
| Atlantic & Kesslar Logan: | | | | |
| Leck, 3, 74 | 1 | 493 | 1 | 0 |
| Bankers Prod. Corp.: | | | | |
| Hendricks, 30, B-5 | 1 | 47 | | |
| California Co.: | | | | |
| Hendricks, 29, B-5 | 8 | 1,709 | | |
| Cranfill & Reynolds: | | | | |
| Hendricks-A, 28, B-5 | 2 | 510 | 1 | 1 |
| Hendricks-B, 35, B-5 | 1 | 119 | | |
| Hendricks-C, 33, 26 | 2 | 2,541 | | |
| Hendricks-D, 33, 26 | 1 | 227 | | |
| Hendricks-E, 33, 26 | 2 | 538 | | |
| Eastland Oil Co.: | | | | |
| Hendricks, 35, B-5 | 1 | 303 | 2 | 1 |
| Empire G. & F. Co.: | | | | |
| Hendricks-B, 27, B-5 | 1 | 99 | | |
| Gulf Prod. Co.: | | | | |
| Hendricks-A, 34, B-5 | 12 | 3,241 | 4 | 0 |
| Hendricks-B, 45, 26 | 11 | 8,540 | | |
| Hendricks-C, 40, B-5 | 5 | 2,650 | | |
| Humble O. & R. Co.: | | | | |
| Hendricks-A, 34, B-5 | 16 | 5,518 | 1 | 3 |
| Hendricks-B, 29, B-5 | 6 | 1,080 | | |
| Hendricks-C, 32, 26 | 8 | 1,504 | | |
| Hendricks-B, 47, 26 | 4 | 1,061 | | |
| Independent O. & G.: | | | | |
| Hendricks-A, 34, B-5 | 7 | 2,062 | 1 | 0 |
| Howe-B, 44, 26 | 2 | 186 | | |
| McCabe, 36, B-5 | 2 | 301 | | |
| Hendricks, 42, B-5 | 1 | 21 | | |
| Vardeman-B, 41, B-5 | 6 | 1,634 | | |
| Magnolia Pet. Co.: | | | | |
| Hendricks, 29, B-5 | 8 | 930 | 1 | 0 |
| Marland Oil Co.: | | | | |
| Hendricks, 33, 26 | 4 | 1,819 | | |
| Hendricks-A, 29, 26 | 1 | 267 | | |
| Hendricks-B, 34, 26 | 1 | 312 | | |
| Mining & Eng.: | | | | |
| Hendricks, 10, B-12 | 1 | 531 | 1 | 0 |
| Murchison & Cranfill: | | | | |
| Hendricks-A, 35, B-5 | 3 | 1,887 | 0 | 1 |
| Hendricks-B, 35, B-5 | 3 | 752 | | |
| Hendricks-C, 35, B-5 | 1 | 60 | | |
| Hendricks-H, 33, 26 | 1 | 1,901 | | |
| Hendricks-I, 34, 26 | 2 | 557 | | |
| Prairie Oil & Gas: | | | | |
| Hendricks, 40, 26 | 6 | 3,461 | 2 | 3 |
| Pure Oil Co.: | | | | |
| Hendricks-A, 41, B-5 | 10 | 2,329 | | |
| Hendricks-B, 24, B-5 | 13 | 2,937 | 4 | 7 |
| Hendricks-C, 45, 26 | 7 | 7,412 | | |
| Republic Prod. Co.: | | | | |
| Hendricks-A, 45, 26 | 3 | 2,610 | 3 | 2 |
| Hendricks-B, 41, B-5 | 4 | 1,903 | | |
| Hendricks-C, 42, B-5 | 4 | 639 | | |
| Richardson et al: | | | | |
| Stockton, 50, F | 1 | 1,168 | | |
| Roxana Pet. Co.: | | | | |
| Scarborough, 1, C-22 | 2 | off | 3 | 1 |
| Hendricks-A, 45, 26 | 6 | 5,261 | | |
| Hendricks-B, 29, B-5 | 6 | 1,502 | | |
| Hendricks-C, 29, B-5 | 8 | 2,640 | | |
| Hendricks-D, 41, B-5 | 6 | 1,990 | | |
| Hendricks-E, 40, B-5 | 3 | 940 | | |
| Hendricks-F, 46, 26 | 5 | 2,634 | | |
| Hendricks-G, 39, 26 | 1 | 110 | | |
| Roxana-Texas: | | | | |
| Cosden-A, 3, B-12 | 3 | 1,136 | 3 | 1 |
| Hendricks, 45, 26 | 6 | 2,638 | | |
| Hendricks-A, 29, B-5 | 9 | 2,327 | | |
| Hendricks-B, 40, 26 | 6 | 2,319 | | |
| Hendricks-C, 40, 26 | 6 | 4,441 | | |
| Hendricks-E, 40, 26 | 3 | 1,209 | | |
| Hendricks-D, 40, 26 | 6 | 2,081 | | |
| Skelly Oil Co.: | | | | |
| Hendricks, 40, 26 | 12 | 8,796 | 1 | 0 |
| Hendricks-B, 39, B-26 | 1 | off | | |
| So. Crude O. P. Co.: | | | | |
| T-67 Hendricks-A, 42, B-5 | 2 | 222 | 36 | 15 |
| T-67 Hendricks-3-A, 4, B-12 | 4 | 712 | | |
| T-67 Hendricks-B, 44, 26 | 3 | 798 | | |
| T-67 Hendricks-3-B, 33, 26 | 4 | 893 | | |
| T-67 Hendricks-C, 33, B-5 | 5 | 806 | | |
| T-67 Hendricks-2-D, 28, 26 | 1 | 830 | | |
| T-67 Hendricks-E, 42, B-5 | 3 | 213 | | |
| T-67 Hendricks-F, 33, B-5 | 4 | 1,092 | | |
| 7-68 Hendricks-3-A, 35, B-5 | 3 | 638 | | |
| T-88 Hendricks-A, 44, 26 | 4 | 860 | | |
| T-88 Hendricks-B, 4, B-12 | 2 | 560 | | |
| T-88 Hendricks-C, 29, B-5 | 7 | 1,083 | | |
| T-88 Hendricks-H, 28, B-5 | 4 | 902 | | |
| T-88 Hendricks-I, 30, B-5 | 4 | 1,328 | | |
| T-88 Hendricks-J, 30, B-5 | 2 | 1,159 | | |
| T-88 Hendricks-L, 4, B-12 | 1 | 493 | | |
| T-88 Hendricks-K, 41, 26 | 3 | 941 | | |
| T-88 Hendricks-M, 33, 26 | 21 | 8,971 | | |
| T-88 Hendricks-N, 28, 26 | 2 | 1,260 | | |
| T-88 Hendricks-P, 28, 26 | 1 | 415 | | |
| T-88 Hendricks-S, 34, 26 | 2 | 546 | | |
| T-88 Hendricks-T, 34, 26 | 3 | 782 | | |
| T-88 Hendricks-U, 41, 26 | 4 | 1,146 | | |
| T-89 Hendricks-A, 35, B-5 | 3 | 369 | | |
| T-89 Hendricks-B, 35, B-5 | 2 | 721 | | |
| T-89 Hendricks-F, 40, B-5 | 1 | 246 | | |
| Texon O. & L. Co.: | | | | |
| Hendricks-A, 41, B-5 | 6 | 856 | | |
| Hendricks-B, 45, B-5 | 5 | 1,461 | 1 | 0 |
| Winkler O. P. Co.: | | | | |
| Hendricks, 33, 26 | 1 | 241 | | |
| Miscellaneous | | | 5 | 6 |
| Total Winkler County | 409 | 154,698 | 77 | 44 |

Note—Shut down: Humble O. & R. Co., 1; Murchison & Cranfill, 1; Republic Prod. Co., 2; Roxana-Texas, 1; So. Crude O. P. Co., 19; miscellaneous, 1; total, 25.

*Number of operations given irrespective of lease location.

## REFINERY GASOLINE PRICES REDUCED

(Continued from Page 28)

profit from a skimming operation gas oil prices might be expected to take a turn upward.

Lubricating oils were freely offered on the spot market at a wide range of prices. The light neutral grades and the motor oils suffered most in this respect. Substantial price concessions continue to be offered for the larger orders and the lesser seasonal demand is being keenly felt. Most refiners manufacturing lubricating oils are storing a portion of their production instead of attempting to meet abnormally low competitive prices. Cylinder stocks and bright stocks have not been traded under such extreme pressure and prices on these have been well maintained at the same level and the only price concessions given have been to exporters.

### Gasoline and Naphthas

While the tendency has been toward an easing off in the gasoline market as the lesser seasonal demand was felt, the general opinion of the market is that it has showed unusual stability. The average prices as reported by representative refiners on sales made from Oklahoma plants on Monday to jobbers are shown below.

| Grade— | Price Oct. 29 | Price Oct. 22 |
|---|---|---|
| 58-60 437 endpoint | .09568 | .09720 |
| 60-62 437 endpoint | .09900 | .10125 |
| 60-62 400 endpoint | .10250 | .10180 |
| 64-66 375 endpoint | .11000 | .10830 |

The high-gravity gasoline, particularly the 64-66 375 endpoint material, was quoted over a wide range of prices, but very little of it moved. With natural gasoline prices above the refinery gasoline price, refiners have discouraged the sale of this grade and have substituted a 60-62 390 endpoint grade where possible. Exporters have also found the high gravity gasolines scarce except at prices which they say they cannot pay and compete with the Gulf Coast material. Despite the fact the general gasoline market has shown a consistent decline, the 390 and 375-endpoint grades are stronger now than two weeks ago. Exporters purchased some of this as low as 9⅝ cents in North Texas two weeks ago and gradually the price rose to 9⅞ cents and some refiners refused to sell at 10 cents during the past week. This was the result of an order for 2,000,000 gallons to move by November 5, however, and a freer offering of this material is likely over the immediate future with a gradual softening of prices.

Naphtha sales continued at a normal rate with prices unchanged.

### Natural Gasolines

All grades of natural gasoline advanced during the last week and all sold within a very narrow price range. Remarkable strength was shown in the C grade as prices were maintained at 10 cents. A few sales were made below this price, but this market has become rather centralized and no great quantity was available under 10 cents. Unless a much larger production develops in the Seminole Field than has ever been anticipated, the history of natural gasoline prices this year will probably be quite different from that of last year. Manufacturers now anticipate receiving prices at or near the refinery price at all times over the balance of the year and many of them expect the average to be above 8½ cents.

### Kerosene and Distillates

All grades of kerosene were offered at a wide range of prices depending upon its destination. If competition from the outside areas had to be met, a liberal price concession was made, but the general market was maintained at 5⅞ to 6⅛ cents. Those refiners making the low flash, low sulphur content grades still say they are able to move their production readily and at the top of the price range.

Distillate prices remained unchanged and very little change is anticipated over the immediate future, for while the demand may increase materially, there is an excess of manufacturing capacity to make it and more of the kerosene and gas oil will be diverted into distillate as the demand develops.

### Fuel Oil and Gas Oil

Except for the occasional report of an abnormally low price paid for fuel oil, there is little change in the condition of the market. Refiners continue to burn a portion of their production, have increased their stocks and are hopeful colder weather will solve the problem. The belief prices may be advanced is gradually weakening, and the final outcome seems to hinge on what the crude market will do.

### Lubricants and Wax

Neutral lubricants showed the same weakness, characteristic of that market over the past few weeks and prices were cut to get the larger orders. Wax demands have grown fewer in number, but the statistical position remains decidedly in favor of prices being maintained at a relatively high level.

## ANNOUNCES MEXICAN POLICY ON PETROLEUM

MEXICO CITY, Mexico, Oct. 27. (By Trens Agency).—Dr. J. M. Puig Casauranc, having taken charge as Secretary of Industry, Commerce and Labor, has issued a declaration of policy referring to petroleum.

Those who submit themselves for petroleum exploitation, he says, will be given legal facilities, without the slightest purpose of obstructing them. The petroleum industry, he adds, is now controlled by laws and regulations, as no other industry in the country, and, with the exception of some points which are doubtful, the administrative resolutions should be inspired by the law and its regulations; but even in those cases, small in number, which might be matter of serious conflict, the decisions will not be delayed indefinitely nor will obstruction be offered. In no case will it be considered as a manifestation of hostility or an act of disrespect or unwarranted, the exercise of all the legal rights which the law grants, as well as a direct appeal to the president of the Republic, in complaint against or disagreement with the administrative acts of the Secretary of Industry. The declaration that a document lacks certain requirements to make it valid and that they are at variance with the truth, is a restrictive faculty of the judicial power, and if this department or any other dependency of the executive power rejects a document not declared false by the judicial power, it violates the texts and with them the guarantees safeguarded by Articles 14 and 16 of the Constitution. This department will not impose on those asking for concessions penalties which are not provided by the law.

Finally, he says, in order to eliminate intermediaries, who, particularly in petroleum matters, are the frequent causes of perverse rumors and of dishonest maneuvers near the petroleum companies and of the private parties who have petroleum interests which are dealt with by the department, the firm purpose is announced of not handling matters except with legitimate interested parties or with supposedly interested parties who justify their rights with documents which have an initial appearance of validity or with legally authorized representatives. In no instance, since it is specifically forbidden the bureaus, may these bureaus give out supposed previous notices nor announcements on the final decision, before this is dictated by the persons to whom it corresponds; that is, by the secretary, following an executive order of the president of the Republic.

## T. C. M'COBB GOES WITH STANDARD OF NEW JERSEY

NEW YORK, Oct. 29.—T. C. McCobb has resigned as secretary and treasurer of the Imperial Oil, Ltd., to become assistant comptroller of the Standard Oil Co. of New Jersey. He had been associated with Imperial for the past 11 years.

Mr. McCobb is well known in oil trade circles. He entered the business in 1902 as freight clerk for the Atlantic Refining Co. For 10 years following he occupied most of the junior clerkships at one time or another, where he acquired a general familiarity with the various branches of office administration and accounting. When the International Petroleum Co. took over the London & Pacific Petroleum Co. in 1914, Mr. McCobb was sent to Peru, where he installed a complete new system in the producing and marketing departments. As a result of this he was appointed chief accountant for International, in which position he remained until June 1, 1917, when he assumed charge of refinery accounting for the Imperial Oil, Ltd., becoming secretary and treasurer of that company in 1926.

## GULF COAST MARKET PRICES ARE UNCHANGED

HOUSTON, Tex., Oct. 30.—Despite the continued movement of Gulf Coast lubricating oils and the fact that October business of refiners has been better than any of the several preceding months the demand so far apparently has not justified any stiffening of prices which have remained unchanged for several weeks.

About the only change in the markets as the week opens is a further trend toward the lighter viscosity oils accompanying the colder weather over the country but even this demand is coming in for small tank car lots only. Fuel oil continues to mark time with sellers asking 90 cents for Bunker C, although not doing any business at that figure or much at any price. Several refiners Tuesday still claimed they would hold their product until the demand improves.

# PRELIMINARY PROGRAM ARRANGED FOR INTERNATIONAL COAL MEET

More than 100 speakers representing 12 countries are tentatively listed to present papers at the Second International Conference on Bituminous Coal to be held under the auspices of the Carnegie Institute of Technology in Pittsburgh, November 19 to 24, 1928, according to a preliminary program announced by President Thomas S. Baker.

According to the plans, 10 major subjects are listed for discussion in addition to the addresses of a general nature to be presented by Lord Melchett (Sir Alfred Mond), the British capitalist; Georges Claude, the eminent French scientist; Prof. Fritz Hofmann, the German scientist who makes synthetic rubber from coal; Dr. F. zur Nedden of Germany; F. G. Tryon of the United States Bureau of Mines, and others.

Major subjects to be discussed, it is expected, will include "Pulverized Fuel," "Gas," "Liquefaction," "Fertilizers," "Origin, Composition and Classification of Coal," "High Temperature Distillation." "Low Temperature Distillation," "Power and Combustion," "Purification and Cleaning," and "Tars and Oils."

As indicated in the list of major topics, the chief purpose of the coming conference will be to present the results of recent studies of coal that have to do with improved methods of utilization and combustion. The list of speakers includes the world's leading authorities on the latest developments in improved utilization of coal as a source of energy and power.

**Large Group From Germany**

Germany will apparently be represented by the largest delegation with about 20 of her most distinguished scientists and engineers in attendance. France, England and Canada will also be represented by comparatively large numbers of scientists who have been identified with the latest discoveries in coal research. Other countries that will be represented on the program of speakers are Russia, Italy, Japan, Austria, Denmark, Belgium and Jugo-Slavia. In addition, delegates have been appointed to represent governments and scientific organizations in Chile, Cuba, Czecho-Slovakia, Norway, Poland, Rumania and Spain.

Approximately 60 of the 103 speakers already listed to participate in the proceedings, the announcement points out, will come from outside of the United States.

The preliminary program of major subjects and speakers under each include the following:

"Catalysis Applied to the Conversion of Hydrocarbons," Dr. Carl Krauch, director, I.G. Farbenindustrie Aktiengesellschaft, Ludwigshafen am Rhein, Germany; "Low Temperature Carbonization," Col. W. A. Bristow, managing director, Low Temperature Carbonization, Ltd., London; "Low Temperature Carbonization of Coal by the Hayes Process," F. L. Tenney, consulting engineer, Milwaukee, Wis., and M. J. McQuade, president, Ben Franklin Coal Co. of West Virginia, Pittsburgh; "A Diesel Engine Using Powdered Coal," Rudolph Pawlikowski, general manager "Kosmos" Maschinenbauanstalt, Gorlitz, Germany; "The Powdered Coal Locomotive of the General Electric Co.," Baurat Walter Kleinow, Henningsdorf, Germany; "Pulverized Fuel and Its Various Fields of Application," Dr. George E. K. Blythe, general manager, The Buell Combustion Co., Ltd., London; "Recent Scientific Developments in Coal Research," Dr. Friedrich Berguis, Heidelberg, Germany; "Thermodynamic Bases of Pulverized Coal Combustion," Dr. Ing. P. Rosin, Dresden; "Burning Bituminous Coals in Pulverized Form," Henry Kreisinger, research engineer, The Combustion Engineering Corp., New York; "Comparison of Stokers and Pulverized Coal," F. H. Daniels, president, Riley Stoker Co., Worcester, Mass.; "Gas Purification in Relation to Coal Sulphur," Dr. F. W. Speer, Jr., director of research, The Koppers Co., Pittsburgh; "A New Method for the Determination of Melting Processes in Ash," Dr. Karl Bunte, professor an der Technischen Hochschule Karlsrhue, Baden, Germany; "Removal of Ash and Loss of Carbon from Boiler Furnaces," Dr. David S. Jacobus, advisory engineer, Babcock & Wilcox Co., New York, and E. G. Bailey, president, Fuller Lehigh Co., Cleveland; "Clinkering of Coal Ash in Boiler Furnaces," Thomas G. Estep, professor of mechanical engineering, Carnegie Institute of Technology; "Fusing Point of Ash on Mixtures of Coal and Foreign Materials," W. D. Langtry, president, Commercial Testing & Engineering Co., Chicago, and J. H. Kohout, chemical director, Commercial Testing & Engineering Co., Chicago; "Coke Burning Domestic Boiler," Dr. Charles Brabbee, director, Institute of Thermal Research, American Radiator Co., New York; "Sparking and Smoking Characteristics of Coals," A. E. Cameron, professor of metallurgy, University of Alberta, Edmonton, Canada, and K. C. Gilbart, University of Alberta, Edmonton, Canada; "Boiler Furnaces for Bituminous Coal," A. G. Christie, professor of mechanical engineering, Johns Hopkins University; "Transmission of Coke Oven Gas in Pipe Lines in Germany," Dr. Alfred Pott, general direktor, Ruhrgas Aktiengesellschaft Essen an der Ruhr, Germany; "A Study of the Comparative Costs of Gas Production in the Retort House," Dr. E. W. Smith, technical director, Woodall-Duckham Companies, London; "Gas for Automobile Use," (tentative), C. Simon, L'Administrateur Delegue, Societe pour l'Exploitation des Tubes Electro-Frettes, Paris; "Some Phases of the Organic Sulphur Problem in the Manufacture and Distribution of Gas," Wilbert J. Huff, professor of gas engineering, Johns Hopkins University; "Low Temperature Tars," Dr. A. Mailhe, professor at the Sorbonne, Paris; "The Composition of Brown Coal Tar," Prof. Dr. Fritz Frank, Gesellschaft fur Braunkohlen & Minerol Forschung, Technische Hochschule, Berlin; "Continuous Distillation of Coal Tars and Crude Oils by Superheated Steam—The Abderhalden Process," J. V. Henri Winkler, director of the research department, Compagnie des Mines de Vicoigne, Noeux, et Drocourt, Paris; "The Part of the Catalyst in Coal Processing," Dr. Hugh S. Taylor, Princeton University; "Coal Consumption as Affected by Increased Efficiency and Other Factors," Dr. Arthur D. Little, consulting engineer, Cambridge, Mass.; "Producer Gas for Firing Boilers," William B. Chapman, consulting engineer, New York; "Gas and Tar Industries in France: Their Actual State and Their Tendencies," Jean Bing, Comite Central des Producteurs et Distillateurs de Goudron en France, Paris; "Cracking of Tar Acids from Coal," Dr. J C. Morrell, assistant director of research, Universal Oil Products Co., Chicago, and Gustave Egloff, director of research, Universal Oil Products Co., Chicago; "New Catalytic Processes for the Utilization of Coal Tar Crudes," Dr. Alphons O. Jaeger, technical director, The Selden Co., Pittsburgh.

## HEALD ADDRESSES GEOLOGISTS

K. C. Heald, in charge of the geological research work for the Gulf Oil Corp. at Pittsburgh, Pa., read an exceptionally interesting paper, entitled, "Some Unsolved Fundamental Problems of the Petroleum Geologist," at a meeting of the Tulsa Geological Society last week. Taking three specific problems, namely the origin of oil; the source of rocks, and the migration of oil, Mr. Heald offered some thoughts which clearly indicated that the geological profession was making some definite progress towards finding out the more intimate details of these problems. Mr. Heald also established some very interesting comparisons between various fields on the matters mentioned above.

# PROPOSED FLOOD CONTROL PLAN VITALLY CONCERNS OIL INDUSTRY

By D. H. Bancroft

SHREVEPORT, La., Oct. 27.—While farmers, bankers and business men of the Tensas and Boeuf River Basins in Louisiana and Arkansas are aware of the threat against that vast territory contained in the Jadwin plan of flood control said to be favored by the Government, those of the oil and gas industry interested in the same area apparently are not aware of the magnitude of the danger to their interests.

This rich country, containing over 2,500,000 acres of fertile land, and the homes of 150,000 people, embraces also part of the Monroe gas field, all of the Richland Parish gas field which has potentialities, as indicated by the 60 wells completed so far, and most of the potential East Carroll Parish Field beside much territory that has been and is now the scene of wildcat activities. The area involved extends from the Arkansas River in Desha County, Arkansas, to the mouth of the Red River at Angola, Avoyelles Parish, Louisiana. Northeast Louisiana and southeast Arkansas are at persent the most active areas of the Shreveport division of the Mid-Continent oil country, as to both proven fields and wildcatting.

The plan most favored by the Government for controlling floods in the lower Mississippi as it affects the territory in question, is a floodway controlled by a "fuse plug" levee at Cypress Creek at the mouth of the Arkansas River which, when the river reaches a stage of 60.5 feet at Arkansas City, Ark., will go out releasing a torrent of water to sweep through the Tensas and Boeuf Basins to the Red River and thence down the Atchalafaya Basin to the Gulf. The 60.5-foot stage at Arkansas City corresponds to the present provisional grade adopted by the Mississippi River Commission in 1914.

When this occurs the torrent of water released will, in the Boeuf Basin alone, cover a strip of territory averaging 13 miles wide to a depth of 20 feet, Judge W. G. Street, of Camden, Ark., attorney for the Southeast Arkansas Levee Board, declared at the recent meeting of the Tensas Basin Flood Control Association in Monroe. Such a disaster will occur, he said, at an average of every 12 years, statistics showing the recurrence of a stage of 60.5 feet at Arkansas City at such periods.

The menace to the oil and gas industry, particularly the latter and those dependent upon it, lies in the constant threat against the pipe lines serving these thousands of consumers, and to drilling and completed wells. On October 15, the threatened area had production as follows: Monroe Field, 556 wells capable of producing a total open flow of 3,919,887,000 feet of gas per day; Richland, 60 wells, with an open flow of 2,234,105,000 feet. The one well in the East Carroll Field, the discovery, has an open flow of 50,000,000 feet. Four pipe lines of major proportions are already built and building from the threatened territory serving, among the larger cities, New Orleans, Memphis, Shreveport, Little Rock, Houston, Port Arthur and Beaumont. Another line, in prospect, will serve St. Louis and East St. Louis and still another will serve over 50 communities in the Gulf Coast and central parishes of Louisiana from Franklin to Lake Charles and Alexandria south. Every one of these lines and the gathering systems feeding them would be subject to the action of flood waters released by the breaking of the Jadwin "fuse plug" levee, with breakage almost inevitable.

In the case of drilling wells anywhere in the area subject to the periodic floods under the Jadwin plan, the threat is at once apparent. Such torrents of water sweeping against derricks would topple them over like straws, fill their boilers with mud, ruin the rig and probably necessitate abandonment of the test altogether. Surface fittings on completed wells would be the easy target of driven debris and when broken off would create a situation more easily imagined than described. Producing gas fields would become a collection of geysers, and crater wells, a total loss, would replace profitable producers. Then, too, would be the very great danger of flooding the producing sands to the permanent extinction of the entire field. The recession of flood waters always is slower than their onset, even under such a plan as that now favored by the Government, a series of floodways; consequently the losses to the operators would be prolonged and increased by the inability to get men and materials to the wells to repair them, in the event repairs were possible, for a long time after the waters had receded. Since the territory is low, flat, soft alluvial soil it would be almost impossible to transport heavy machinery and heavy field equipment anywhere in the floodled area for weeks after the flood itself had disappeared.

## INTERESTING DATA ON EASTERN GAS WELL

OLEAN, N. Y., Oct. 25.—The Belmont Quadrangle Drilling Co.'s No. 1 Gilbert in Wirt Township, Allegany County which struck a strong flow of gas in the Onondaga limestone at a depth of 3,995 feet, blew wide open for a week before it could be placed under control. The gas appeared shortly after the hard cap rock was penetrated.

Paul D. Torrey of Bradford, Pa., the geologist who recommended the drilling of the test and made the location has written the following short account of the project for The Oil and Gas Journal:

No. 1 Gilbert was located upon the data obtained from an exhaustive study of the geology of Allegany County and it is somewhat interesting to note that it was drilled on a tract of land that was regarded as worthless in so far as shallow sand production was concerned. The operating company disregarded all past criteria for obtaining production and located the well entirely upon geologic information. The results from the drilling of the discovery well indicates that their faith in geologic science was more than justified and it should be most gratifying to geologists in general that an application can be found for modern petroleum geology in one of America's oldest oil fields. It is of more than passing interest to note that No. 1 Gilbert is located only about 16 miles from the famous Seneca Oil Springs, near Cuba, N. Y., where petroleum was first discovered on the North American Continent.

"The Belmont Quadrangle Drilling Corp. was organized specifically for the drilling of what has proved to be a discovery well. It was largely through the efforts of William A. Dusenbury of Olean, N. Y., that the company was formed, and under his direction considerable acreage was leased in the Richburg and surrounding oil fields, covering all possible production below the present productive horizons of the fields.

**Ready to Go 8,000 Feet**

"It was originally intended to drill through the entire Devonian and Silurian section of rocks and although it was appreciated that gas might be encountered in several horizons a derrick was erected capable of drilling to a depth of 8,000 feet or more. The derrick and all of the rig irons were manufactured by the Parkersburg Rig & Reel Co. and in every respect the drilling outfit is one of the best that has ever been erected east of the Mississippi River. Clarence E. London of Kittanning, Pa., had entire charge of drilling operations.

"The well was started with a 20-inch hole; 18⅝-inch A.P.I. casing was used for drive pipe; 13½-inch D.B.X. casing was set to shut off surface water and the practically nonproductive Richburg

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group of sands were cased off with 10-inch D.B.X. seamless casing. All of the casing used was manufactured by the National Tube Co. After the gas was encountered a string of 6⅝-inch, 24-pound, D.B.X. seamless casing was run for tubing with a double rubber disk packer on the end.

**Shutting in the Gas**

About 200 bbls. of 14-pound mud was forced down above the packer between the 6⅝-inch and 10-inch casing and the well was then shut in with a regular christmas tree arrangement of high pressure valves after blowing into the air for over one week. It is rather unlikely that the well will be drilled any deeper at the present time since it has a tendency to freeze up when pinched in. The gas produced is very wet and when the well is blowing wide open considerable high-gravity crude naphtha comes with it. A Smith oil and gas, high-pressure separator is being installed so that the gas can be marketed.

**Plan Conservative Development**

"It is, of course, rather difficult to estimate how far the deep-sand production will extend upon the basis of the discovery well alone. The Belmont Quadrangle Drilling Corp. controls a large acreage that might be expected to be productive and it is anticipated that development will be carried on in a systematic and orderly manner. It is likely that a rather wide spacing pattern will be used and every effort will be made to conserve the natural rock pressure. Considerable leasing is being done by individuals and companies but it is very probable that much of the acreage that is being obtained will prove to be worthless for there seems to be a very close relationship between geologic structure and oil and gas accumulation.

"The discovery of deep sand or more correctly limestone production in Allegany County is a culmination of a series of deep test wells that have been drilled throughout the Appalachian Fields. No. 1 Gilbert is the second deepest well that has yielded what might be considered as commercial production. Many of the deep tests have been located with no regard to geologic conditions and several of them were not adequately equipped so that drilling could be carried to depths where possible gas-bearing formations might be expected.

"The Onondaga limestone is a very widespread formation but unless the characteristics of its production are fully understood it is rather unlikely that wildcatting for oil or gas from this horizon will be very successful."

## PRICE WAR IN PARIS

NEW YORK, Oct. 27.—A petroleum price war is reported from Paris, where the Chambre Syndicate (association of large interests) has reduced its petrol prices by 15 francs per hectolitre. Retailers are reported to have reduced their quotations 1 franc per 5-litre can, tourisme grade being quoted 11¼ to 11¾ francs and poids lourds grade from 10 to 10½ francs. In the suburbs where prices are normally about 1 franc less than the Paris city quotations, a reduction of one-half to three-quarters franc has taken place on tourisme petrol, with poids lourds unchanged.

## SALT CREEK ROYALTY BIDS

WASHINGTON, D. C., Oct. 30.—Secretary West today invited sealed bids for the royalty oil accruing to the government from leases on land in the Salt Creek Field in Wyoming, the bids to be opened December 10.

## OIL OPERATOR DIES IN PLANE

SAN ANTONIO, Tex., Oct. 27.—Edward St. Albans, 50-year-old Laredo oil man, died in an improvised hospital which his physicians established in an airplane 25 minutes before the plane reached San Antonio, where he was to have been placed in a hospital. He was stricken with hemorrhages of the stomach in Laredo and ordered a plane from San Antonio.

# Several Factors to Consider in Design of Gasoline Plants

By B. F. Spigener*
Columbian Gasoline Corp.

Factors affecting location of the plant are the volume and pressure of gas to be treated, water supply, railroad facilities, climate conditions, the distance that material is to be hauled and road conditions, size and length of gathering lines and quality of gas treated.

All of the above conditions and many more, before beginning the installation of the plant, should have careful study. The gas supply should be carefully investigated, especially for absorption plant operating on casinghead gas. The plant should be located so as to be as near as possible to the center of the gas supply, in order that the gathering lines will be of minimum length and maximum capacity.

**Water Supply**

It is necessary to locate the plant at a point where the water supply is adequate. Of course, in most instances, if the water and gas are distant from each other, it would probably be better to pump the water through a pipe line for a considerable distance rather than locate the plant near the water supply, since the cost of gas lines would be greater than the water lines.

The same argument holds for locations as regard shipping facilities. It is advisable to locate the plant as near a railroad as possible, consistent with other local conditions. A study of the producing area should be made. This is especially true for new fields in which there is no plant in operation to serve as a basis in estimating the future possibilities of the field. A knowledge and history of the field serves the purpose in estimating the probable life of the wells, and the rate of decline in gas volume.

**Heat Exchangers**

The heat exchanger is a series of pipes, through part of which cooled oil, charged with gasoline from the absorbers, passes on its way to the still, passing in transit, on opposite sides of pipe walls, hot denuded oil coming from the still and from which it extracts some heat so that the fuel necessary to run the still is reduced in quantity. The higher the temperature to which the charged oil from the absorbers is raised the greater the fuel economy of the plant and the smaller the investment in oil cooling coils to cool the hot denuded oil before it again enters the absorber.

The oil cooling coils are rows of pipe usually 2-inch pipe through which the oil passes to be cooled before it enters the absorber. These pipes best cooled by means of water sprayed on them, condensers are attached to the steam still to cool the hot gasoline vapor as it leaves the still and also attached to the vapor coils and compressors to cool the hot vapors to condense the gasoline containers therein.

"The knock out" or auxiliary condenser box is a temperature controlled tank between still and vapor coils where condensed water from the steam and some absorbent oil is separated from the gasoline.

A vent tank is interposed between the absorber and heat exchanger in the charged oil circuit to relieve the oil of some of the gas which it has absorbed along with the gasoline and also as a storage for the oil pumps.

**Design of Absorbers**

The diameter of the absorber in general is determined by quantity, quality and pressure of gas passing through it and the kind of filling or baffles used to break up or atomize the steam of gas and oil. Cake cablestone, tile wooden slats, steel slate, steel trimming and special forms such as Basheg rings and factor baffles all have been used.

The ideal baffles is one which has the greatest amount of surface exposed and takes a minimum amount of space. Heat exchangers used in absorption plants are of two types, double pipes and tubular double pipe exchangers consist of one pipe within the other, with the hot oil flowing through the outside pipe and the cold through the inner one in the opposite direction. Tubular heat exchangers consist of a nest of small pipes inside one large one with the hot oil flowing through the larger pipe and surrounding the smaller pipes inside of which the colder oil flows.

An ideal exchanger constructed in such a manner that the entire nest of bundles of tubes may be withdrawn from the shell and casing to allow cleaning both inside and outside of the tubes is a desirable one.

**Condensers**

As far as the type consisting of coils above ground is concerned, it seems difficult to surpass it in efficiency with the best type of shell and tube condensers, because in addition to cooling effect of the water alone, one also gets the cooling effect produced by the evaporation of the water as it sprays from the nozzles and falls on the pipes.

The temperature to which the oil can finally be reduced depends, regardless of type of the units, upon the temperature of the plant water supply. Where a plant has an abundance of clear cold water it does not make much difference what kind of a condenser is installed, as the condensers are but a small cost of the plant's total cost.

It would seem that a combination fire and steam still would be desirable. The temperature employed for combination fire and steam still lies between those required for direct steam distillation alone and those for fire distillation alone. Depending upon the production of steam employed, usually a temperature of 275 to 375 degrees and pressure varying from atmospheric to 15 pounds gauge are carried in combination fire and steam stills.

The oil used in oil absorption plants for absorbing the gasoline from natural gas is generally known as mineral seal oil. The oil is a cut from crude oil intermediate between kerosene and gas oil fractions. It is a refined product, washed with alkali and acid water for natural gasoline trade.

**Loading Rack**

If the loading rack is near enough to the plant to warrant taking back vapor envolved during loading, it is advisable that the vapors be treated at the plant in order to recover the desirable constituents present in the vapor and to minimize the fire hazard.

**Oil Pumps**

Care should be taken in choosing the kind of pumps since it is imperative that oil circulation be carefully regulated. For low pressure work centrifugal pumps are giving excellent results. A reserve oil pump should be provided.

**Cooling Towers**

Where a continuous supply of cold water is not available it is necessary to recool and reuse the water. This is done by spraying the water in contact with sufficient quantities of air where evaporation of part of the water takes place.

The heat required for evaporation of part of the water effects cooling of the remainder. A spray pond or water cooling tower installation is necessary for this method of cooling water.

There are several types of manufactured water loading towers on the market, but it is the general practice for most operators to design their own towers. The oil and gas cooling coils, as a rule, are placed in those towers. The oil coils should be preferably put in a loading tower by themselves the practice of putting oil coils in the same tower with gasoline condenser coils, or allowing hot water from the knock-out box to flow into the same tower, frequently results in higher oil temperature than desired. Adequate cooling of oil is imperative from the viewpoint of maximum gasoline. Insufficient oil cooling capacity has been responsible for low efficiency of gasoline extraction at a large number of plants.

*Plant foremen's meet.

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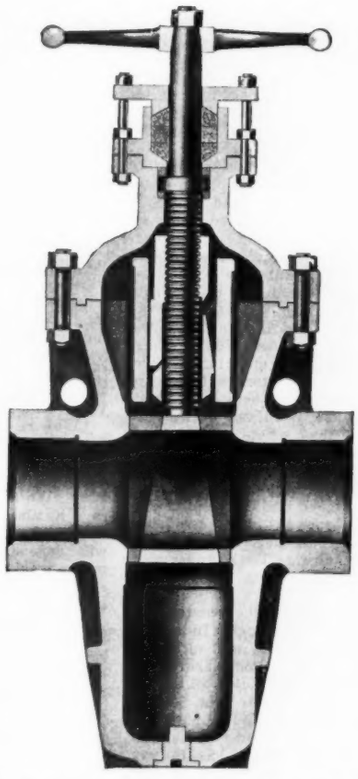

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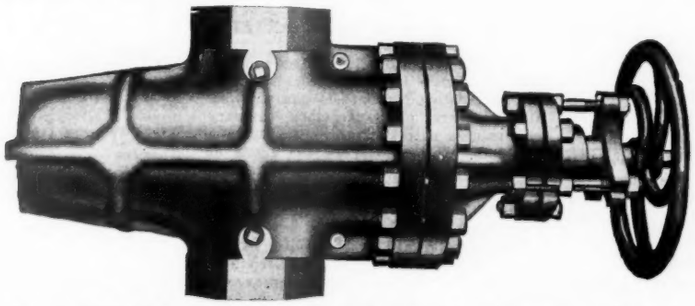

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# Of Interest to Sales Departments

## Ritz-Carlton Shows Economy of Oil Fuel For Heating Hotels

NEW YORK, Oct. 27.—A noteworthy example of the economy of oil as fuel for large buildings is furnished by the Ritz-Carlton Hotel, one of the largest hostelries in this city. The management reports a direct saving of $25,490 90 in its fuel bill over a period of six months. This represents a saving of 30 per cent compared with coal fuel costs over a similar period.

On the score of actual cash economy, oil heating has cut costs most frequently through the reduction of labor. The Ritz-Carlton, for example, reduced its outlay for boiler room personnel by more than $5,000 during the six months' period through the substitution of oil heating equipment. Since the costs and problems of ash removal were eliminated, another $2,000 was saved there.

The advantage of liquid fuel which permits these important cost economies is the ease with which it may be handled. It needs only to be piped from storage tank to furnace. And this fact, besides allowing a large reduction in handling costs, permits the hotel operator to save basement space. The storage tank can be placed where it will be most out of the way—in some instances buried beneath the cellar floor where it is entirely out of the way—and the space thus recovered is made productive.

In this regard, it should be noted that oil fuel, being ashless and dustless, makes this recovered basement space available for purposes it could not be used for if the cellar were dirty. The laundry can be in the same room with the furnace, if necessary.

Cleanliness is one of the outstanding characteristics of liquid fuel. **In an increasing number of towns and cities oil is solving the difficult smoke-abatement** problem. A properly regulated oil burner produces neither smoke nor soot. Thus, by the use of liquid fuel, the hotel reduces, at least by the volume of its own smoke and soot, the bill it has to pay for clean curtains, clean draperies, and linen.

The significant characteristic of the modern oil burner, which has taken its place now in 750,000 homes and buildings, is that heat is produced by a flame rather than a fire. The oil blaze can be shut off in a moment and started as quickly. Because of this, important fuel economies are possible, especially during the in-between seasons when the outdoor temperature is in the neighborhood of 50 to 65 degrees. The heating plant must be flexible at these seasons. Only a small amount of indoor heat needs to be added for the hotel to be comfortable. The automatic oil heating plant not only responds to sudden temperature changes —maintaining a uniform temperature even during unexpected frosts and thaws —but it consumes no fuel when no heat is required. A banked fire eats up fuel and supplies heat. The oil burner flame, when "banked," is shut off entirely.

The complete picture, so far as operation economies go, is painted by the "before and after" cost sheets of the Ritz. Here are the figures:

| **Cost of Heating With Coal (Six Months)** | |
|---|---|
| Cost of coal (7,195 tons) | $69,417.73 |
| Cost of boiler room labor | 11,134.13 |
| Cost of ash removal | 2,388.00 |
| Repairs and removals | 678.40 |
| Total | $83,618.26 |
| **Cost of Heating With Oil (Six Months)** | |
| Cost of oil fuel (1,032,082 gals.) | $52,417.36 |
| Cost of boiler room labor | 5,710.00 |
| Total | $58,127.36 |
| Saving in six months through use of oil fuel | $25,490.90 |

This six months' saving, it should be noted, amounted to approximately 85 per cent of the cost of installing the necessary equipment.

The modern oil burner can be successfully installed in existing boiler equipment. Where this is done, the only necessary investment is for the oil burning and storage equipment and for the labor in setting it up.

As an indication of the trend toward oil heating, the following brief list of hotels is representative: Commonwealth Hotel, Chicago; San Remo Hotel, New York; Fry Hotel, Seattle, Wash.; Oaks Hotel, Springfield, Mass.; Melbourne Hotel, St. Louis, Mo.; Miami Biltmore Hotel, Coral Gables, Fla.; Whitcomb Hotel, San Francisco; Conway Hotel, Appleton, Wis.; Bellevue Hotel, Kansas City, Mo., and Carlton Hotel, Portland, Ore.

## IMPERIAL OIL ACTIVE IN AIDING AVIATION

CHATHAM, Ontario, Oct. 27.—F. J. Wolfe, director of marketing for Imperial Oil, Ltd. accompanied by A. E. Halverson, assistant general sales manager and H. R. Knowles, manager of service stations, recently visited Calgary in connection with the operations of the Calgary flying field. Discussing the attitude of Imperial Oil, Ltd. toward aviation, Mr. Wolfe said:

"We are intensely interested in aviation because it means much to the development of western Canada and much therefore to the growth of Imperial Oil, Ltd. We are donating service stations to a number of flying fields across Canada, and what we will do in Calgary will depend largely upon the arrangements reached between our local officials and those in charge of the flying field in Calgary.

"We have built such service stations at Toronto and Walkerville, and have completed arrangements to build at Saskatoon and Moose Jaw, while other western points are under consideration. We aim to put up service stations where fliers may taxi up to their supplies on the field. We want them scattered throughout the West, so that anywhere an airplane pilot may run short of fuel or lubricating oil, he will be within reasonable reach of refilling. In addition to stations we will put up warehouses at strategic points to ensure a sufficient supply.

"Arrows pointing to the important towns in all directions are part of our policy in connection with the fostering of aviation in the West. Also we will place large letters in white on our buildings telling fliers unacquainted with the territory what city they are flying over."

## INVESTIGATE VALUE OF ALCOHOL MOTOR FUELS

WASHINGTON, D. C., Oct. 27.—Efforts of various companies in Great Britain to develop an alcohol motor fuel which could be used in part as a substitute for gasoline, Trade Commissioner Homer S. Fox, London, informs the Department of Commerce that one of the principal British companies interested in this matter is the Distillers Co., Ltd., the largest group of alcohol distilling companies in the United Kingdom It is now claimed that experiments made by this company or affiliated companies have shown that alcohol is twice as efficient as benzol in preventing knocking in an internal combustion engine.

One of the principal results in this connection has been the production of a dry alcohol, and it is now stated that the Distillers company have put down a large unit at their Liverpool factory for the drying of alcohol by a French process, and they find that the 7 per cent by weight of water contained in alcohol as ordinarily produced, can be removed at a very small cost, so that over 99 per cent absolute alcohol can be obtained which can be mixed with gasoline in any proportion.

A large unit, capable of handling about 4,000 gallons a day on the same principle, has been sent to the Distillers company's Australian branch, and is expected to be in full operation shortly. It is expected to use the output of this plant mixed with gasoline in the proportion of about 15 to 20 per cent of anhydrous alcohol. It is claimed that this mixture is one of the most nearly ideal fuels yet developed as an antiknock fuel, and that it prevents, to a very large extent, the deposit of carbon in the cylinders and prevents damage to the lubricating oil.

## AIRPLANE "TRACKAGE" NOW EXCEEDS RAILROADS

On December 17 of this year, the twenty-fifth anniversary of air transportation, airplane transport companies will have six times as much "trackage" as the railroads did the end of their thirty-fifth year in the United States, according to L. D. Seymour, chief engineer of the National Air Transport, in an address recently delivered in Chicago before the Society of Automotive Engineers.

In showing the tremendous strides made in the past few years and the possibilities of the future, all of which are of such vital interest to the oil industry, he said:

"The first commercial operation of an airmail route in this country began in 1926; now about 30,000 miles of commercial air routes are covered every 24 hours. The mail transported has increased about 300 per cent, a 50 per cent increase having occurred in August of this year. Within six months he hopes, the company will have a passenger service to New York City. Then it will be possible to leave Chicago at 9 a.m. and be in New York in the early afternoon. An airplane can leave New York City at noon and be in San Francisco the next afternoon."

### DOMINION OIL CO. CHARTER

CHATHAM, Ontario, October 27.—The Dominion Oil Co., Ltd. has been incorporated under Ontario charter with 100,000 shares of no-par stock, to carry on business as distributors of petroleum products. It has acquired the assets of a company of the same name, organized earlier in the year to take over the business of the Deep Rock Oil Co., Ltd.

The new company has 118 service stations, either owned or controlled, chiefly in the Toronto and Niagara districts of Ontario, and has acquired a 10-year contract with the Havoline Oil Co. of Canada giving exclusive rights for the distribution of its products in Ontario. The Dominion Oil Co. at its Toronto plant manufactures "One-Thousand-Mile Axle Grease."

### USING ACETYLENE AS FUEL

The use of acetylene gas has been found practical in Norway as a fuel for internal combustion engines replacing gasoline, but the experiments have been conducted with the idea of proving its adaptability rather than attempting to replace gasoline. The cost of manufacturing the carbide is high, even in Norway, where electric power is cheap and for that reason the use of acetylene would be found practical only in the case gasoline would become scarce or the supply be cut off by war.

## Tax Reports Show Increase of 12.7% in Gasoline Demand

Gasoline consumption in 35 States for the month of August, 1928, as indicated by reports made by wholesalers and dealers in the various States under provisions of the gasoline tax laws or gasoline inspection laws totaled 781,644,000 gallons, compared with 693,600,000 gallons in August, 1927, an increase of 88,044,000 gallons, or 12.7 per cent. Daily average consumption for August, 1928, was 25,214,000 gallons compared with a daily average of 23,956,000 in July, 1928, an increase in daily average during August of 5.3 per cent.

Gasoline consumption in these 35 States for the eight months ending with August, 1928, amounted to 4,853,092,000 gallons compared with 4,322,389,000 gallons for the corresponding period of 1927, an increase of 530,703,000 gallons, or 12.3 per cent.

Consumption during July and August for the State of New Jersey is also shown.

The figures giving the quantity of gasoline sold or offered for sale, as reported under various laws follow: In some cases they are gross figures before deductions allowed for small quantities of gasoline reshipped or sold for other than taxable use, the tax upon which, if paid, is subsequently refunded. All figures which are subject to revision, were computed by the American Petroleum Institute.

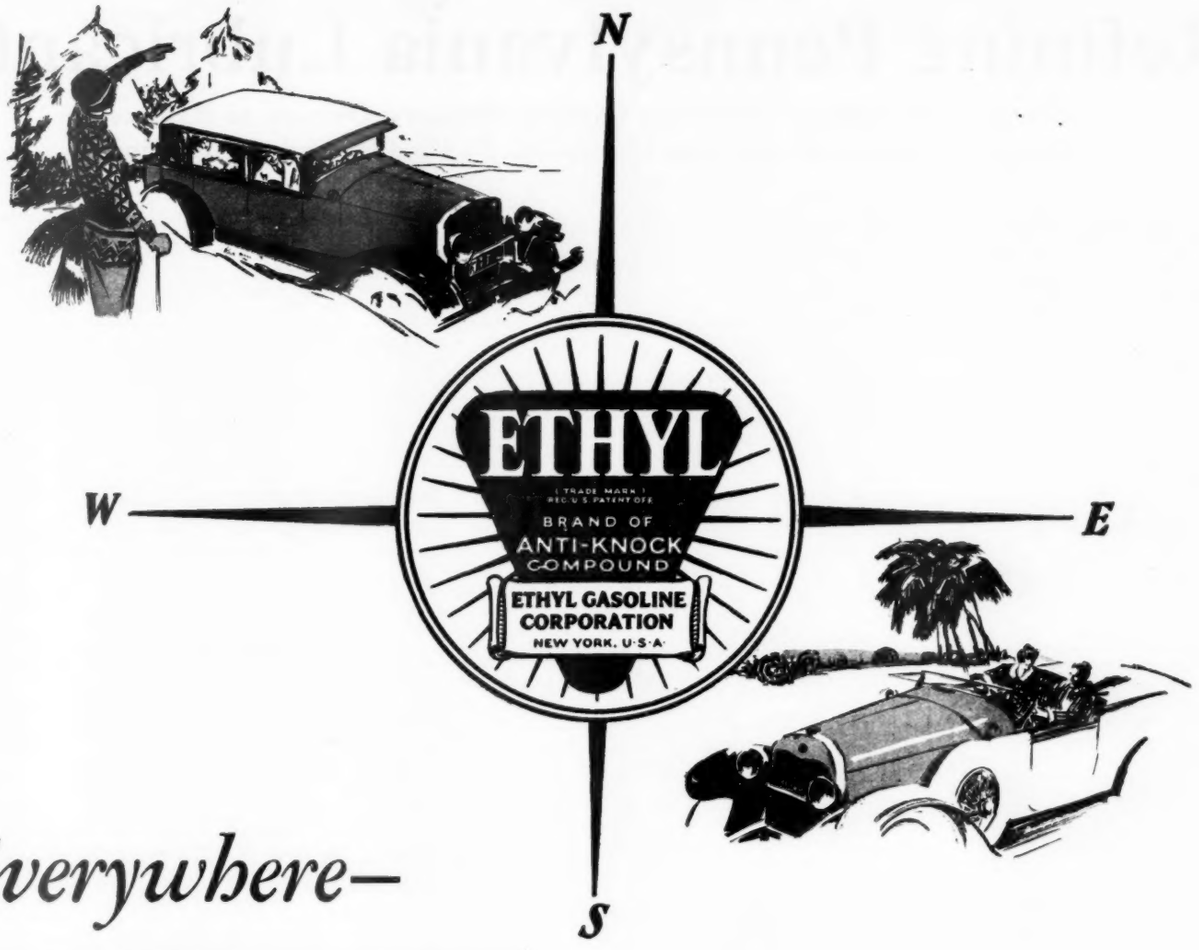
| | Month of— | |
|---|---|---|
| | Aug., '28 gallons | Aug., '27 gallons |
| Alabama | 15,153,000 | 14,170,000 |
| Arizona | 4,727,000 | 3,528,000 |
| Arkansas | 8,482,000 | 9,596,000 |
| Colorado | 17,082,000 | 13,906,000 |
| Delaware | 2,289,000 | 2,593,000 |
| Florida | 16,170,000 | 18,871,000 |
| Georgia | 18,227,000 | 17,116,000 |
| Idaho | 6,294,000 | 5,379,000 |
| Indiana | 39,683,000 | 35,094,000 |
| Iowa | 32,838,000 | 28,751,000 |
| Kansas | 46,883,000 | 28,029,000 |
| Kentucky | 14,629,000 | 12,852,000 |
| Louisiana | 14,830,000 | 13,625,000 |
| Maine | 11,762,000 | 11,244,000 |
| M'chigan | 73,579,000 | 72,397,000 |
| Minnesota | 38,253,000 | 34,757,000 |
| Missouri | 35,269,000 | 31,025,000 |
| Nebraska | 22,393,000 | 18,519,000 |
| Nevada | 1,577,000 | 1,312,000 |
| New Hampshire | 6,504,000 | 6,345,000 |
| New Mexico | 3,604,000 | 3,098,000 |
| North Dakota | 15,672,000 | 12,445,000 |
| Ohio | 91,733,000 | 76,926,000 |
| Oklahoma | 27,395,000 | 23,682,000 |
| Oregon | 15,743,000 | 14,946,000 |
| Rhode Island | 6,888,000 | 6,615,000 |
| South Carolina | 10,187,000 | 9,633,000 |
| South Dakota | 13,972,000 | 11,517,000 |
| Tennessee | 16,875,000 | 14,988,000 |
| Texas | 60,809,000 | 56,342,000 |
| Utah | 4,886,000 | 4,285,000 |
| Virginia | 18,535,000 | 17,043,000 |
| Washington | 24,216,000 | 22,140,000 |
| Wisconsin | 40,297,000 | 37,614,000 |
| Wyoming | 4,208,000 | 3,217,000 |
| Total | 781,644,000 | 693,600,000 |
| Daily average | 25,214,000 | 22,374,000 |
| Increase over previous year: | | |
| Amount | 88,044,000 | |
| Percentage | 12.7% | |
| New Jersey | 43,671,000 | |

## BUILD PIPE LINE FROM PLANT TO BULK STATION

HOUSTON, Tex., Oct. 27 —Instead of depending on tank cars, tank wagons or boats to supply its bulk station at Corpus Christi, on Corpus Christi Bay, Humble Oil & Refining Co. is laying a 2-inch line direct to its refinery at Ingleside, across the bay, a distance of 12 miles.

The line will be used exclusively for transporting gasoline from the refinery to the bulk plant and will be in operation in the near future. Previous to the construction of the Ingleside refinery this year, gasoline was moved into Corpus Christi mostly by boat from Humble's refinery at Baytown.

Although definite plans have not been completed, extensive enlargement and improvement of the bulk station will be made in the near future.

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# Refining Pennsylvania Lubricants

## Changing Marketing Conditions Causing Refinery Owners to Replace Obsolete Equipment. Vacuum Distillation Method Receiving Attention

By C. O. Willson

OIL CITY, Pa., Oct. 27.—A steady increase in the demand for Pennsylvania grade crude oils and an equally steady advance in posted price schedules are bringing changes in manufacturing methods at a majority of the refineries operating in this section. With the 10-cent advance announced October 13—the sixth during the past year—present crude oil schedules represent an increase of from 75 to 80 cents per barrel over the low of 1927.

By Pennsylvania grade crude oil is meant the oil produced in western New York, western Pennsylvania, southeast Ohio and West Virginia. As was explained in an article appearing in the October 11 issue (page 150) of The Oil and Gas Journal, there has been a strong price situation in this grade due to the increased consumption of lubricating oils manufactured from the crude. The sales promotion activities of the Pennsylvania Grade Crude Oil Association and individual refiners who have in several cases created a nation-wide outlet for their motor oils are held largely responsible for this increased demand.

The position of the refiner in this price situation is apparent when present Pennsylvania grade crude oil prices are compared with those in the Mid-Continent Field. The six posted schedules covering the several fields producing the oil vary from $3.10 to $3.45 a barrel at the wells. The crude will average around 40 A.P.I. gravity. The same gravity crude oil in the Mid-Continent is now posted at $1.56 a barrel. Thus the Pennsylvania refiner at present is paying more than twice as much for his crude oil as the Mid-Continent refiner.

From the standpoint of gasoline and kerosene the Mid-Continent refining industry considered as a unit will secure greater yields for the same gravity crude than does the Pennsylvania industry due in part to the characteristics of the crude oil and also due to the fact that refiners in the former area have installed more cracking and other special equipment which gives larger recoveries of the light end products.

With this wide variation in the cost of the raw material and yields of the lighter products it is apparent that the Pennsylvania refiner must rely on the heavy fractions of his crude oil to offset these disadvantages.

The present situation is not entirely new, for since the advent of western crude oils, Pennsylvania crude oils have always been quoted at substantially higher prices. However, this difference has been exceptionally wide during the past year and a half, and it is this fact that is causing refinery owners to pay more attention to their manufacturing operations.

### Variation in Crude

Although the crude oil in the fields previously mentioned are all classed as Pennsylvania grade oil, there is quite a variation in the yields of marketable products and this is reflected in the refinery operating methods. It is claimed for all the crudes listed as Pennsylvania base, that they have lubricating oil fractions with inherent characteristics which give them greater value in comparison to crudes obtained in other areas.

In Table 1 a summary of distillation tests of representative Pennsylvania grade crude oils is given. The data show the differences in the yields of both light and heavy end products. These differences in quality in part account for the variation in the posted schedules. The proximity to refinery markets also is a factor in prices.

The data in Table 1, based solely on distillation tests, give only a general idea of the actual yields secured by refinery operators. The writer in checking the yields of several refineries operating with crudes produced in different areas found these plant yields vary widely even in cases where the plants are operated with crude of the same specifications.

This is due both to the method of manufacturing and market outlets. A few of the plants have operated consistently for 25 to 50 years with only minor changes in the quantity of crude oil refined daily and with no important improvements in their operating methods. These plants are relatively small so far as crude oil capacity is concerned. In their early history they developed a market for their output and these same concerns are still their customers. The latter demand certain products and the refinery operation was established on that basis and continues until the present day. So long as the operation is profitable the refinery owners are content to supply the demand even though greater yields could be obtained by installing new equipment and changing the method of operation.

As stated in the beginning these conditions are changing. The supply of the crude oil is limited to around 60,000 bbls. daily at present with only a relatively small yearly increase in prospect. As competition for this crude oil becomes increasingly keen it is apparent that many of the haphazard practices of the past will have to be dropped and the plants operated with the view of securing the maximum yields of the most valuable products at the lowest possible costs.

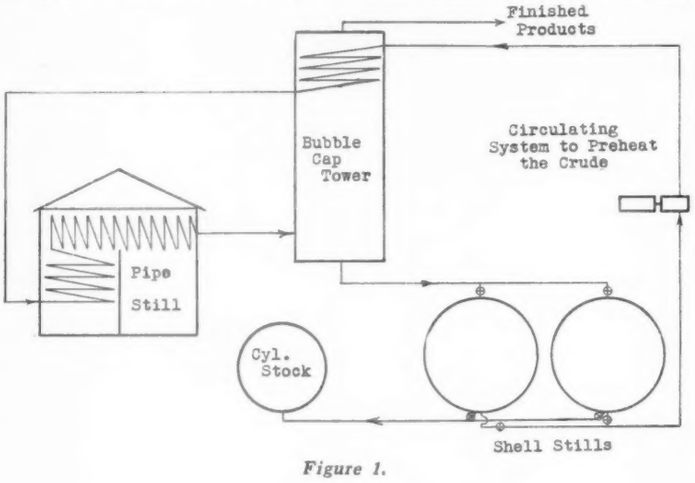


*Figure 1.*

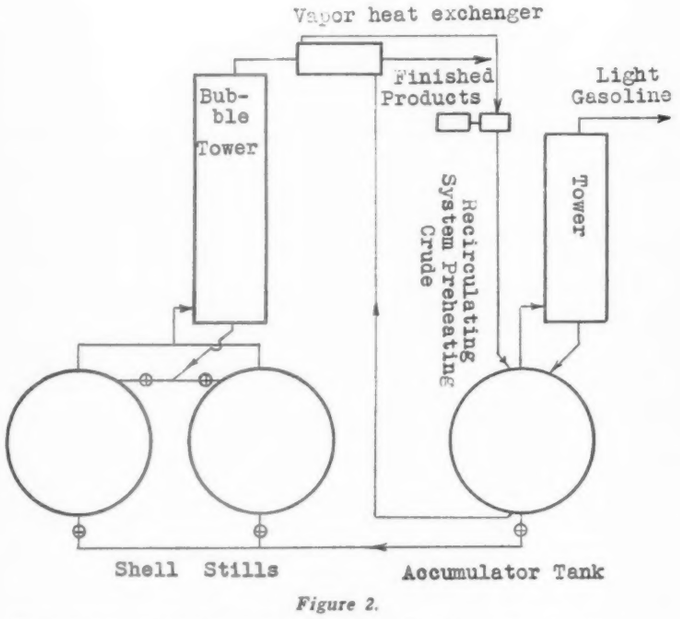


*Figure 2.*

*Flow charts of two types of distillation units for small refineries operating with Pennsylvania crude oil.*

### Batch System

A brief description will be given of the batch and rerun method of operation, typical of all Pennsylvania refinery operations a few years ago and which is still followed at many plants. This will serve as the basis of comparison with the results obtained at other plants which have from time to time been modernized with the latest equipment available.

In the batch method of operation where no special tower equipment is provided, the first distillation operation in a shell still simply divides the crude charge into several distillate fractions most of which have to be rerun in other batch operations. A naphtha or benzine cut is first distilled off the crude. Then a kerosene distillate, followed by a gas oil and wax distillate cuts. The benzine, cut to secure finished gasoline or naphtha, is rerun in another still with the bottoms going to the kerosene distillate. The latter is rerun to secure the finished kerosene and the bottoms are then usually mixed with the gas oil fraction. The gas oil is suitable for cracking, although several of the refineries do not have cracking equipment. The refiners without cracking stills sell the gas oil to other refiners or dispose of it as fuel oil. Due to the relatively high cold test, it is impossible to secure a large cut of distillate or gas oil suitable for domestic burners.

The wax distillate is rerun to secure a cracked distillate suitable for pressing. The bottoms of 2 to 5 per cent are suitable for cracking and generally are mixed with the gas oil cut. The cracked distillate at a temperature around 10 to 15 Fahrenheit is then run to the presses and the slack wax separated from a fraction which is known as pressed distillate.

### Pressed Distillate

The pressed distillate is rerun in a batch operation, the overhead fractions being separated so as to obtain one or more neutral grades of the desired viscosity. The viscous grades generally refined from Pennsylvania crude vary from 150 to 225 at 100 degrees Fahrenheit. The

**TABLE 1—SUMMARY OF DISTILLATION TESTS OF REPRESENTATIVE GRADES OF PENNSYLVANIA CRUDE OIL***

| Sample— | A.P.I. gravity | Color | Gasoline-naphtha Yield | Gasoline-naphtha Gravity | Kerosene Yield | Kerosene Gravity | Gas oil Yield | Gas oil Gravity | Lubricating distillate: Nonviscous 50 to 100 at 100° F. | Lubricating distillate: Medium 100 to 200 at 100° F. | Residuum above 200 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Allegany County, New York | 39.4 | Dark green | 30 | 57.7 | 17.5 | 44.9 | 11.2 | 37.2 | 11.1—35.8 to 31.7 | 5.6—31.7 to 29.3 | 21.6 |
| Cabin Creek, West Virginia | 46.0 | †4½ | 40 | 62.3 | 24.3 | 45.2 | 5.9 | 39 | 8.6—37.6 to 34.2 | 3.3—34.2 to 33 | 14.4 |
| Allegheny County, Pennsylvania | 41.7 | †6 | 23.8 | 60.8 | 16.8 | 47.2 | 11.5 | 39.4 | 17.8—38.4 to 33.8 | 2.0—33.8 to 33.2 | 25.1 |
| McKean County, Pennsylvania | 40.4 | Green | 32.5 | 60 | 17.8 | 44.9 | 9.8 | 37.0 | 11.0—36.2 to 32.5 | 4.9—32.5 to 30.8 | 21.0 |
| Venango County, Pennsylvania | 41.3 | Green | 29.6 | 58.2 | 22.4 | 43.0 | 7.6 | 39.0 | 11.3—33.2 to 31.9 | 4.3—31.9 to 30.0 | 21.8 |
| Pennsylvania grade, Ohio | 44.3 | B. green | 33.5 | 60 | 20.2 | 45.8 | 14.1 | 37.8 | 7.4—35.2 to 23.7 | 6.5—32.7 to 30.8 | 15.3 |

*The sulphur content of the crudes varies from .05 to .19 per cent. The carbon residue in the crude varies from .2 to .8 per cent. All the crudes are classed as paraffin base. †N.P.A. color scale. All data from tests conducted by Bureau of Mines.

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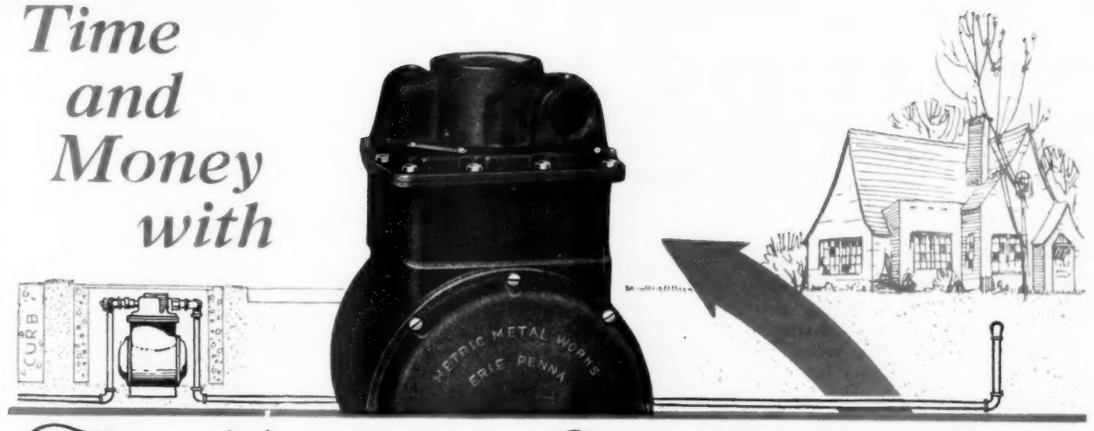


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Fig. 589
Bronze

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Fig. 1183
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The Liquid Level Gauges replaced the usual cocks on the still heads by means of which stillmen determined the liquid level. Blowing out liquids or vapor through still head cocks wasted material and sometimes caused fire.

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viscous neutrals are brought to the desired color by filtering with fuller's earth.

The lightest fraction obtained in distilling the pressed distillate is sometimes returned to the gas oil and sold as fuel oil or charging stock for cracking units. When a profitable market exists this light fraction is rerun and nonviscous neutrals are obtained. Any product with a viscosity of less than 100 is generally termed a nonviscous oil.

The slack wax is further refined in a sweating and treating operation to remove the oil, a refined crystalline wax being obtained. The oil removed from the wax commonly known as foot's oil can be returned to the sweating operation or by further processing special oils are obtainable.

### Cylinder Stocks

The heavy residuum left in the bottom of the still in the first distillation operation constitutes the steam refined cylinder stocks commonly sold under the name of 600 steam refined. The main operating feature here is to secure the desired flash and fire. The product is usually filtered before being offered to the trade.

In the making of bright stocks this heavy residuum is blended with a heavy naphtha. This naphtha constitutes from 25 to 40 per cent of the blend which is first filtered to color. It then goes to the cold settling tank where by chilling to the desired temperature for the needed cold test, an amorphous wax is removed. This amorphous wax can be sold as petrolatum and when blended with other products can be used as fuel or charged to the cracking units.

The blend of heavy residuum and naphtha minus the amorphous wax is then returned to a batch still and naphtha removed and the desired flash secured in the bright stock. The foregoing briefly describes an operation which, as previously stated, is typical of plants which have made no special effort to modernize their equipment. The amount of rerunning required will run as high as 300 per cent on the crude oil charge. Large quantities of steam are used in these old methods of processing and with inefficient batch distillation this means that plant fuel costs are high.

### Yields Vary

No yield sheet could be offered as representative of the results obtainable by this method of operation. It will vary with the different crudes and the exact products desired by the refinery owners. One plant with this method of operation showed the following yields based on the crude charge: Gasoline, 27 per cent; kerosene, 5 per cent; gas oil (all fractions suitable for cracking), 30 per cent; wax distillate, 23 per cent; cylinder stock, 10 per cent, and loss 5 per cent. Of the 23 per cent wax distillate cut 7 per cent was neutral oil of 150 viscosity; 4 per cent of 180 viscosity; 3 per cent nonviscous oil; 1½ per cent crystalline wax and the remainder gas oil cracking stock. The 10 per cent steam cylinder stock made into bright stock gave a yield of 7 per cent bright stocks and the remainder petrolatum and loss. These yields were obtained with Alleghany County crude oil of about 40-degree gravity.

With Bradford or McKean County crude oil having a 42 A.P.I. gravity another refiner reported yields of 30 to 35 per cent gasoline, 16 per cent kerosene, 8 per cent gas oil, 26 per cent wax distillate, 16 per cent cylinder stock and 4 per cent loss. From the 26 per cent wax distillate cut the following split-up was obtained: Fourteen per cent gas oil, 3 per cent nonviscous oils, 7 per cent viscous oils and 2 per cent wax. The 16 per cent cylinder stock was further refined into 13 per cent bright stock, 2 per cent amorphous wax and 1 per cent loss. It should be stated that this plant had more modern equipment than the first named.

### Modernizing Plants

It is needless to explain how some of the refinery owners have modernized their operation when compared to the batch operation just explained. Properly designed towers eliminate the necessity of rerunning the gasoline and kerosene streams. Some superintendents have hooked up their old batch stills to operate continuously and secure one or more finished streams from each unit of the battery. By proper distillation and fractionation it is possible to do away with all rerunning of the wax distillate stream to secure the cracked distillate. Other refiners have found it possible to divide this fraction so that it is only necessary to rerun a small part of the entire cut.

Contact filtration has replaced the percolating method in a few plants. In the manufacture of bright stocks, the centrifuge method with Sharples machines has quite generally replaced the cold settling method, especially among the larger plants. Lower costs and greater yields are claimed for the new method. As one phase of this operation, what are known as Sharp stocks are now being manufactured. These are made by the centrifuge method from a long residuum cut. The latter includes a part of what was formerly contained in the viscous neutral fraction.

With this method of operation a 450 flash finished product is obtained which requires very little blending in the manufacture of motor oils. It reduces the amount of processing necessary to secure the maximum yields of finished products and thus reduces costs. Several plants operate their lub plants exclusively in this manner.

### Three Aims

In general the Pennsylvania refiners have three objectives in mind when any changes are made at their lub plants. Their first aim is to improve their products, second to increase their yields and third to lower production costs. Claims as to the superiority of their lubricating oils have brought a competitive situation in which the refiners are finding it expedient to seek further improvements in their products. As one phase of this problem the refiners during the past year have found a marked increase in demand for the higher viscosity and higher flash motor oils at the expense of the lighter oils. This has brought an operating problem in that there has been a surplus of the lower viscosity neutral oils and a shortage in the heavier oils. Operators are now endeavoring to increase their yields of the latter.

It would be impossible to enumerate all the minor improvements that plant operators have been able to perfect which have brought economies in one form or another. One operator found that by changing his method of introducing steam in his shell stills he could reduce his steam consumption at his lub plants approximately 50 per cent. Another by rerunning his amorphous wax has been able to secure a large yield of crystalline wax. A Pittsburgh refiner has economized in his wax sweating operation by changing the method of heat circulation.

### New Distillation Equipment

Probably the major problem in the manufacture of the lubricating oil fractions of Pennsylvania crude oil is the distillation and fractionation process. The old batch distillation method does not lend itself to economical operation. It is impossible to secure the maximum benefits in heat exchange and at the same time large quantities of steam are required to assure the desired separation of the lub oil cuts.

As previously stated some refiners have been able to perfect a continuous or semicontinuous hook-up of shell stills with vapor and liquid type heat exchangers and up-to date tower equipment so that their fuel and other operating costs have been materially reduced. One large refiner with a shell still battery removes his gasoline, kerosene, gas oil, cracked distillate and steam refined cylinder stocks in one continuous operation.

### Pipe Stills

Another operator uses a pipe still in skimming the gasoline and kerosene from the crude oil. The topped crude then goes to a battery of shell stills for the removal of the gas oil and overhead cuts of lubricating distillates.

Figure 1 is a flow chart of hook-up in which a pipe still is used in a com-

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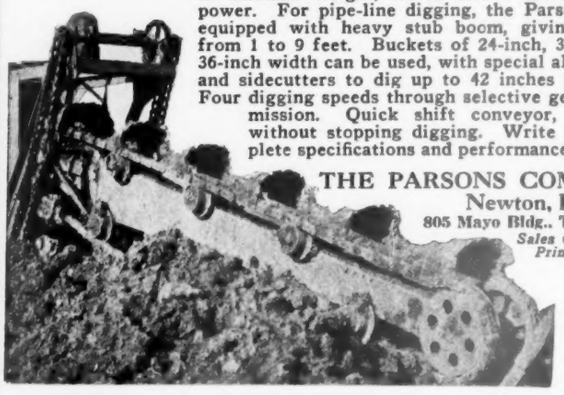

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# STANDARD OIL ISSUES

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plete distillation operation. This method of operation will be found at three or four refineries operating with Pennsylvania crude oil. The accumulator tanks were formerly shell stills operated on the batch system.

In this operation one of the accumulator tanks is first charged with crude oil. It is then circulated through the pipe still, first passing through a knock-out or reflux coil in the top of the bubble tower. The gasoline and other light fractions are first removed, no rerunning of any of the overhead streams being necessary. This operation is continued until the desired flash is secured in the residuum stock in the accumulator tank.

Then the pipe still is shifted to the second accumulator tank which had previously been charged with crude oil. This arrangement permits the continuous operation of the pipe still and the fractionating equipment. Several advantages are claimed for the pipe still in the reduction of the heavy fractions of Pennsylvania crude oil. In the first place it is claimed that they are more economical than shell stills for a given capacity as less fuel is required. The labor item is reduced due to the greater capacity of the pipe stills.

Finally it is claimed that there is less cracking of the lub fractions with pipe still distillation than with the shell stills. In the latter type it is pointed out that it is impossible to get away from "overheating" in the bottom of the stills breaking down some of the hydrocarbons into light ends.

This obviously reduces the yields of lub oil stock and at the same time the presence of light ends tends to complicate the problem of securing the desired flash in the finished product. The gradual heating of the oil in the pipe still with the removal of the vapor as the temperature of the still is increased reduces the amount of cracking. One of these units has a capacity of about 500 bbls. of crude oil daily.

### Shell Still Unit

Figure 2 gives a somewhat similar arrangement except that no pipe still is used, the distillation taking place in a shell still. As the crude oil in one shell still is being reduced crude oil for the second still is being preheated by means of a vapor heat exchanger on the vapor line leading from the bubble tower to the water condensers.

Before the batch operation is completed the crude oil is preheated to around 300 degrees Fahrenheit and it is possible to remove the lightest ends in the form of a gasoline cut. When the first shell still is down, it is cut out of the system and the operators start charging the second still with the preheated crude from the accumulator tank. A second accumulator tank can be used if necessary to secure the desired balance in the operation. As soon as the accumulator tank is emptied of its charge it is filled again with fresh crude which is constantly circulated through the vapor heat exchanger.

This arrangement requires very little new equipment in the plants where it has been installed. It affords an excellent heat exchanger for a batch operation and has greatly reduced the quantity of water needed for condensation of the overhead streams.

### Vacuum Distillation

The latest innovation in the refining of Pennsylvania lubricating oils is the so-called vacuum operation. One organization with three affiliated refining companies is installing a unit at each of its plants. A fourth unit is being installed at another plant. After the first of the year it is probable that definite data will be available regarding the operating results. It is predicted by some observers that the application of vacuum distillation will revolutionize the manufacture of lubricating oils.

The principle of vacuum distillation is not new but the industry has been slow in perfecting an application suitable for the manufacture of lubricating oils. The new units now being installed at refineries in this territory are said to incorporate features never before used in vacuum distillation.

The topped crude oil with the gasoline, kerosene and gas oil fractions removed is charged to a pipe still unit designed to eliminate overheating. The oil from the pipe still unit is discharged into a vaporizer of a large bubble tower unit. The fractionation is aided by a two or three-point vacuum which is maintained at the top of the tower.

The top stream removed from the tower is the cracked distillate cut. This cut is ready for the wax presses without further rerunning. The unit has considerable flexibility as to what cuts are made with the tower, the idea being to adapt the operation to market conditions. It is designed so that cylinder stocks can be taken overhead leaving only a small residuum to be removed from the unit continuously.

### Many Advantages

The claims made for this particular application of vacuum distillation cover about everything that is desirable in the manufacture of lubricating oils. These include maximum yields, minimum cold test, maximum flashes, elimination of filtering and low carbon residues. Superiority in both distillation and fractionation are the basis for these claims. The pipe still reduces the amount of cracking and this is reflected in both the yields and flashes of the oils.

Fractionation with the vacuum principle it is said makes possible a much closer separation of the lub oil cuts than is obtainable by the ordinary methods. This matter of maximum flashes is important since the trend in lub oil manufacture due to changes in engine design is toward higher flash oils.

The reduction of filtering is also largely a matter of fractionation. It has been found that the bulk of the coloring matter in lubricating oils can often be segregated in a small fraction of the crude charge. In the installation just mentioned by taking the cylinder stocks overhead it will be possible to confine the bulk of the coloring matter to the small residuum taken from the bottom of the vaporizer. This will simplify the filtration operation in the manufacture of steam refined cylinder stocks or bright stocks.

## NORTH AND WEST TEXAS PIPE LINE MOVEMENTS

FORT WORTH, Tex., Oct. 27. — The several pipe line companies operating in North and West Texas handled an average of 554,530 bbls. daily during September, according to pipe line statements for that month. The territory covered embraces the Panhandle, Wichita Falls district, Ranger district and West Texas.

Humble Pipe Line Co. moved more than any of the other purchasers by taking approximately 147,000 bbls. daily. Most of this was from West Texas. Shell Pipe Corp. was next in line, 55,000 bbls. plus, with The Texas Company and Gulf Co. following with 50,000 bbls. and 40,000 bbls. respectively.

The following table gives the runs by companies irrespective of districts in which crude was purchased:

**Pipe Line Runs, by Companies, September**

| | Bbls. |
|---|---|
| Atlantic Refining Co. | 33,597 |
| Bartex Pipe Line Co. | 11,051 |
| Bell Oil & Gas Co. | 4,461 |
| Continental Oil Co. | 5,767 |
| Dale Oil & Refining Co. | 325 |
| Gulf Pipe Line Co. | 40,110 |
| Humble Pipe Line Co. | 146,854 |
| Illinois Pipe Line Co. | 22,161 |
| Magnolia Pipe Line Co. | 35,850 |
| Marland Production Co. | 6,002 |
| McMan Pipe Line Co. | 41 |
| Noble Oil & Gas Co. | 27 |
| Pantex Pipe Line Co. | 1,425 |
| Plains Pipe Line Co. | 225 |
| Prairie Pipe Line Co. | 28,214 |
| Pure Oil Co. | 8,350 |
| Shell Pipe Line Corp. | 55,461 |
| Simms Oil Co. | 736 |
| Sinclair Pipe Line Co. | 10,884 |
| Southern Pipe Line Co. | 28,125 |
| Thurber Oil Co. | 1,531 |
| Texas Pipe Line Co. | 60,684 |
| Tidal Oil Co. | 3,825 |
| United Producers Pipe Line Co. | 3,480 |
| Waggoner Pipe Line Co. | 7,000 |
| Miscellaneous | 50,000 |
| Total | 554,530 |

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## *Bettis Advantages as Reported by Actual Users*

The following excerpts are from reports made voluntarily by operators and superintendents which indicate various advantages:

• • •

"We found, when using a weight indicator, that the load going in the hole was reduced from 6 to 8 tons and coming out of the hole was reduced as much as 2 tons, by using Bettis Protectors. Lines show considerably longer life and strain is greatly reduced on derrick and drilling equipment."

• • •

"Observation of one of our wells under test show steam savings running as high as 35%. This is a big saving in fuel and amount of water to be pumped. In another well, by using Bettis Protectors, it was found unnecessary to install an additional boiler that was ordered before the Protectors were in use."

• • •

"In salvaging a 5,000-foot well we were able to pull all of the casing and use it again. It showed no wear on the inside. From 3 other wells in the same location, but not Bettis-equipped, we were unable to save but a small portion of the casing and it was so badly worn that we didn't dare to use it."

• • •

"On a deep test in Ventura before installing Bettis Protectors, it took one turn of the throttle to rotate the pipe when off bottom. After installing, the pipe rotated freely with the throttle barely cracked, saving about 50% fuel.

• • •

"Our hole was so crooked that when the clutch was thrown out the pipe would make five or six revolutions backwards, showing the crooked screw effect on the drill pipe. After installing, the pipe rotated freely."

• • •

"After running 4 months on a well that had reached 5,300 feet on our Brea (Calif.) lease, the wear was not even enough to measure."

• • •

"At least 5 days' production have been saved on each well that we have drilled recently, due to faster and easier drilling, by the aid of Bettis Protectors. We estimate that approximately 15,000 barrels per well in extra production has been obtained as we were drilling in off-set."

• • •

"Following the installation of these Protectors we made two round trips, thinking that a twist-off had occurred because the pipe rotated so easily. We have run these Protectors in formation a great deal and they do not show any abrasion."

• • •

"In one well the saving in collars alone was enough to pay for the Bettis Protectors. Before installing the Protectors we were cutting off and replacing collars every 3 to 5 days. After putting on the Protectors we never changed a collar and finished the well with some 90 days' drilling."

• • •

"Before installing Protectors it was almost impossible to hold pipe with brake. Our brake got so hot we couldn't stand close to it. With the installation of Bettis Protectors we can stop the pipe anywhere we want to and estimate they are taking 10 tons off in weight, going in the hole. We find that the pipe rotates much easier."

• • •

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# NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

## TEXAS PANHANDLE

### Carson County

Magnolia Petroleum Co.'s No. 6 fee No. 244, 660 feet south and west of the NE cor. of the E half of Section 91, Block 4, I.&G.N. Survey. Reynolds and others' No. 1 E. Cooper, 330 feet north and west of the SE cor. of the NW of Section 5, Block 9, I.&G.N. Survey.

### Gray County

Gardner-Collins and others' No. 1 G. H. Saunders, 330 feet south and west of the northeast corner of the south 49 acres of the west 100 acres of Section 3, B.&B. Survey.

## NORTH CENTRAL AND WEST TEXAS

### Archer County

D. O. Johnson and others' No. 5 L. F. Wilson-A, 150 feet south and 750 feet west of the northeast corner of Lot 26, Wilson Geraldine Subdivision. Shappell Oil Co.'s No. 42 J. L. Jackson, 830 feet north and 450 feet west of the SE cor. of the S half of Section 5, Denton County School Land, League 3, A-117. M. S. Thomas and others' No. 1 W. R. Brown, 150 feet north and west of the SE cor. of Section 110, Club Ranch Subdivision. American Refining Co. and Corlett & White's No. 2 J. F. Cernosek, 466.7 feet south and 150 feet west of the northeast corner of the south 40 acres of the west 160 acres of Section 2.409, T.E.&L. Survey. J. H. Freeman and F. C. Grebin's No. 1 A. M. Hennig-Gamble, 150 feet north and west of the southeast corner of the south 50 acres of Section 30, G. P. Meade Subdivision, L. M. Pasture Survey. Magnolia Petroleum Co.'s No. 12 L. L. Hudson, 150 feet north and 750 feet west of the SE cor. of Section 80, Club Ranch Subdivision.

### Brown County

Bradstreet & Stout's No. 14 W. A. Stout, 450 feet south and 150 feet east of the northwest corner of the W. A. Stout tract out of the W. B. Smith Survey, A-155. Cranfill & Reynolds' No. 14 J. B. Eubanks, 1,528 feet south and 638 feet west of the northeast corner of the J. B. Eubanks 1,278-acre tract out of the Robert Mitchell Survey No. 141. Same company's No. 15 J. B. Eubanks, 1,088 feet south and 638 feet west of the northeast corner of the J. B. Eubanks 1,278-acre tract out of the Robert Mitchell Survey No. 141. Ralph Hart and others No. 2 Hart & Roth, 2,545 feet north and 755 feet east of the southeast corner of the Henry Garms Survey No. 36, A-2,027, and located in the H. &T.C. Survey No. 35. Midwest Exploration Co.'s No. 4 E. F. George, 450 feet north and 150 feet west of the southeast corner of their lease out of the W. Q. Cross Survey.

Pandem Oil Corp. and Gilman's No. 1 I. C. Mullins, 150 feet north and east of the southwest corner of the north 100 acres of the SW of Section 32, H.&T.B. Survey. Phillips Petroleum Co.'s No. 1 E. Debusk, 660 feet south and east of the northwest corner of the E. Bell Survey No. 648. The Texas Company's No. 3 John Byler, 150 feet south and east of the northwest corner of their 44-acre lease out of Section 43, T.&N.O. Survey. Crown Petroleum Corp.'s No. 1 Mrs. M. E. Hale, 150 feet south and 2,500 feet east of the northwest corner of the Cyrus Cummings Survey No. 607. J. H. Green's No. 1 W. L. Hill, 150 feet south and east of the northwest corner of the S. P. Walker Survey, A-992. Tom McLendon's No. 1 Mrs. M. E. Hale, 150 feet north and east of the southwest corner of the northeast 40 acres of the Cyrus Cummings Survey No. 607.

### Callahan County

Starr & McDowell's No. 1 C. Jones, 150 feet south and west of the NE cor. of the NW of Section 89, B.B.B.&C. Survey.

### Coleman County

Byrd & Goldston's No. 3 W. L. Moody, 150 feet south and west of the northeast corner of Lot No. 12, J. Scott Survey No. 665. E. L. Chapman's No. 1 C. F. Fuller, 1,300 feet south and 150 feet west of the northeast corner of Lot No. 12, North Subdivision, Manuel Martinez Survey No. 751. E. L. Chapman's No. 1 L. Small, 200 feet south and 810 feet west of the NE cor. of Section 69, Block 1, G.H.&H. Survey. Meredith & Benton's No. 1 M. P. Burney, 200 feet south and 512 feet east of the northwest corner of the M. P. Burney tract out of the S. S. Tompkins Survey No. 328.

### Fisher County

Cranfill & Reynolds' No. 1 J. L. Sharp, C of NE of SW of Section 207, B.B.B.&C. Survey.

### Howard County

Bristow & Merrick's No. 2 Dora Roberts, 330 feet north and 990 feet east of the SW cor. of Section 137, Block 29, W.&N.W. Survey. Louisiana Oil & Refining Co.'s No. 1 W. R. Settles, 1,432 feet south and 2,093 feet east of the NW cor. of Section 6, Block 32, Township 1s, T.&P. Survey, being 657 feet north and 209 feet east of the southwest corner of their 20-acre lease. Magnolia Petroleum Co.'s No. 16 Dora Roberts, 990 feet north and 1,650 feet east of the SW cor. of Section 136, Block 29, W.&N.W.R.R. Survey. Merrick & Lamb's No. 6 H. R. Clay, 250 feet north and 1,769 feet west of the SE cor. of Section 126, Block 29, W.&N.W.R.R. Survey.

### Eastland County

W. E. Davis and others' No. 1 J. W. Horn, 458 feet north and 150 feet west of the SW cor. of Section 67, McLennan County School Land, League Nos. 3 and 4, being 150 feet south and west of the most easterly northeast corner of their 110-acre lease out of Section 57. Mook-Texas Oil Co.'s No. 5 U. Casey-B, 1,030 feet north and 870 feet west of the southeast corner of their lease "B," out of the W. Van Norman Survey. Teats-orth and others' No. 11 J. M. Scott, 425 feet south and 950 feet east of the northwest corner of the J. M. Scott 34-acre tract out of the S. J. Robinson Survey. A. G. Boghossian and others' No. 1 T. B. Busbee, 450 feet north and 1,000 feet west of the SE cor. of Section 2, J. F. Sapp Survey. Clark & Lecker's No. 1 D. F. Smith, 150 feet north and west of the SE cor. of the NE of Section 10, Block 2, E.T.R.R. Survey. W. E. Davis and others' No. 1 J. S. Butler, 150 feet south and 810 feet west of the NE cor. of the SE of Section 28, Block 2, H.&T.C. Survey.

### Irion County

Fuhrman Petroleum Corp.'s No. 1 J. D. Suggs, Lease 1, C of SE of Section 3,024, Block 24, H.&T.C. Survey. Same corporation's No. 1 J. D. Suggs, Lease 2, C of SW of Section 3,029, Block 24, H.&T.C. Survey. Same corporation's No. 1 J. D. Suggs, Lease 3, C of SE of Section 3,009, Block 24, H.&T.C. Survey.

### Crane County

C. C. Duffey and others' No. 3 Cowden Brothers & Co., 200 feet north and 2,440 feet east of the SW cor. of Section 18, Block X, C.C.S.D.&R.G.N.G.R.R. Survey. Simms and Atlantic companies' No. 2 University Land-B, 990 feet north and east of the SW cor. of Section 34, Block 30, University Land.

### Jack County

Lindsey Drilling Co. and Petroleum Producers Co.'s No. 1 A. R. Kuykendall, 900 feet north and 250 feet east of the most southerly southwest corner of the C. L. Bevers Survey, A-1,047.

### Montague County

Pure Oil Co.'s No. 9 Mrs. S. F. Loy and others, 4,450 feet north and 200 feet west of the southeast corner of the 64-acre lease out of Lot 4, J. W. Jones Subdivision, William Donoho Survey, A-178.

### Shackelford County

Earl & Dull's No. 1 T. E. Moore, 150 feet north and east of the SW cor. of the N half of the NE of Section 1,566, T.E.&L. Survey. Ohio-Texas Oil Co.'s No. 8 J. B. Matthews, 750 feet south and 450 feet west of the NE cor. of the SW of the NW of Section 29, Block 10, E.T.R.R. Survey. Wentz Oil Corp.'s No. 1-A, J. B. Matthews, Section 58,

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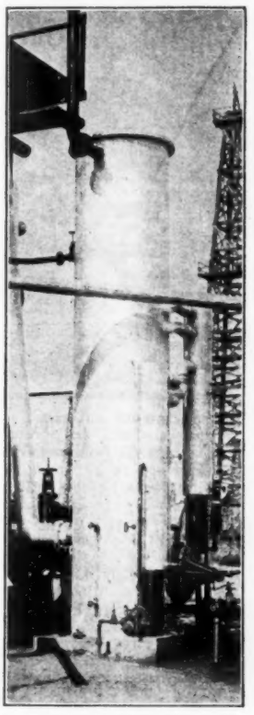

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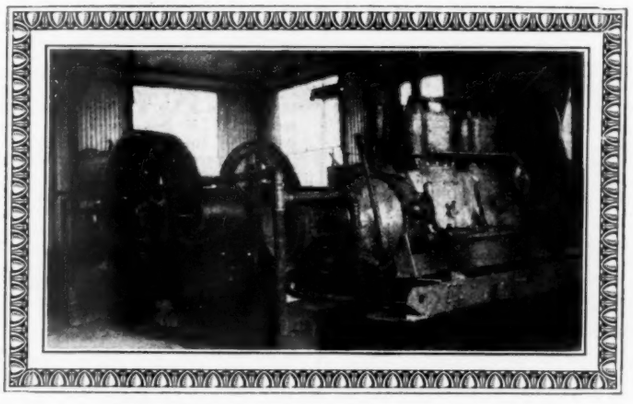

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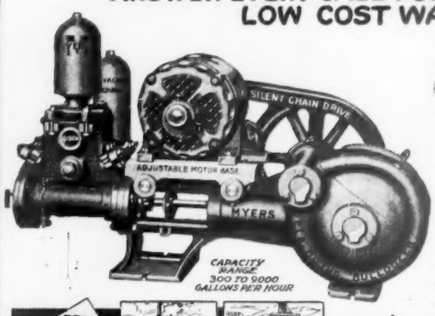


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**Stephens County**

Lone Star Gas Co.'s No. 1 R. A. Lyles, 990 feet south and east of the NW cor. of Section 2,954, T.E.&L. Survey. Phillips Petroleum Co.'s No. 1 J. W. Powell, 439 feet north and 680 feet west of the southeast corner of the J. W. Powell 80-acre tract out of Section 9, Blind Asylum Land. Texas Louisiana Power Co.'s No. 4 J. B. Morton, 500 feet south and 1,000 feet east of the northwest corner of the west 60 acres of the south 120 acres of the E half of Section 123, H.&T.B. Survey. R. B. Thomas and others' No. 1 Satterfield heirs, 400 feet north and 500 feet west of the southeast corner of the H. Y. Satterfield Survey.

**Pecos County**

Mid-Kansas Oil & Gas Co.'s No. 11 I. G. Yates-C, 250 feet south and 845 feet east of the NW cor. of Section 60, Block 1, I.&G.N. Survey. Roxana Petroleum Corp.'s No. 3 M. A. Smith-D, 330 feet south and east of the NW cor. of the S half of Section 24, Block 194, G.C.& S.F. Survey.

**Ward County**

Talbot and others' No. 1 C. C. Dorr, 1,320 feet northwest of the southeast line and 660 feet northeast of the southwest line of Section 9, Block 5, H.&T.C. Survey.

**Wichita County**

Hammon & Garrett's No. 4 S. Mitchell and others, 400 feet south and 150 feet east of the northwest corner of the John T. Lewis Survey, A-460. Hammon and others' No. 10 S. H. McCarty, 450 feet south and 150 feet east of the northwest corner of the W. R. Eaves Survey, A-447. Hammon-Garrett and others' No. 13 S. H. McCarty-A, 150 feet north and 750 feet east of the southwest corner of their 34.8-acre "A" lease out of the Sam O. Fowler Survey, A-78. Same company's No. 14 S. H. McCarty-B, 150 feet south and 50 feet west of the northwest corner of their 20-acre lease "B," out of the Sam O. Fowler Survey A-78. W. H. Hammon and others' No. 11 S. H. McCarty-C, 450 feet south and 150 feet east of the northwest corner of their lease "C," out of the W. R. Eaves Survey, A-447. Hines and Humble Oil & Refining Co.'s No. 9 J. L. and T. J. Waggoner, 842 feet south and 830 feet east of the NW cor. of Section 2, G.C.&S.F. Survey, A-772. Humble Oil & Refining Co.'s No. 1 H. B. Hines-B, 2,000 feet south and 2,550 feet east of the NW cor. of Section 11, H.&G.N. Survey, A-147. Magnolia Petroleum Co.'s No. 5 J. R. Pace, 200 feet south and 750 feet east of the northwest corner of their lease out of the R. J. Scott Survey, A-255. Panhandle Refining Co. and Hines' No. 3 T. L. Burnett and others, 150 feet north and 450 feet west of the SE cor. of the S half of the SW of Section 6, S.A.&M.G. Survey. United Producers Co.'s No. 2 W. L. Hodges, 150 feet north and 1,050 feet west of the SE cor. of the W. L. Hodges 214-acre tract out of the H.T.&B. Survey, A-139.

**Wilbarger County**

J. B. Baker and others' No. 7 W. T. Waggoner-B, 1,170 feet south and 3,360 feet west of the NW cor. of Section 5, Block 5, H.&T.C. Survey, and located in the Thomas D. Purcell Survey. The Texas Company's No. 1 W. T. Waggoner-M, 150 feet north and east of the SW cor. of the SE of the NE of Section 24, Block 4, H.&T.C. Survey. The Texas Company's No. 2 W. T. Waggoner-M, 497 feet north and 150 feet east of the SW cor. of the SE of the NE of Section 24, Block 4, H.&T.C. Survey. Waggoner Refining Co.'s No. 12 W. T. Waggoner-H, 450 feet south and west of the NE cor. of the NE of the NW of Section 24, Block 4, H.&T.C. Same company's No. 13 W. T. Waggoner-H, 450 feet south and east of the NW cor. of the NE of the NW of Section 24, Block 4, H.&T.C. Survey. Same company's No. 14, W. T. Waggoner-H, 750 feet south and 450 feet east of the NW cor. of the NE of the NW of Section 24, Block 4, H.&T.C. Survey. Same company's No. 15 W. T. Waggoner-H, 750 feet south and 450 feet west of the NE cor. of the NE of the NW of Section 24, Block 4, H.&T.C. Survey.

**Winkler County**

Barnsdall Oil Corp.'s No. 1 Tobe Morton, 330 feet north and east of the SW cor. of Section 26, Block B-12, School Land. Humble Oil & Refining Co.'s No. 7 T. G. Hendricks-B, 2,275 feet north and 330 feet east of the SW cor. of Section 39, Block 26, School Land. Prairie Oil & Gas Co.'s No. 2 E. W. Cowden, 1,320 feet north and 330 feet east of the SW cor. of Section 3, Block B-12, School Land. Pure Oil Co.'s No. 9 Grisham-Hunter-C, 990 feet north and west of the SE cor. of Section 45, Block 26, School Land. Pure Oil Co.'s No. 10 Grisham-Hunter-C, 1,650 feet north and 990 feet west of the SE cor. of Section 45, Block 26, School Land. Southern Crude Oil Purchasing Co.'s No. 2 Grisham-Hunter, T-89-F, 2,310 feet north and west of the SE cor. of Section 40, Block B-5, School Land. Same company's No. 3 T. G. Hendricks, T-88-S, 440 feet south and 330 feet east of the NW cor. of Section 34, Block 26, School Land. Same company's No. 1 Ida Hendricks, T-88-W, 330 feet south and west of the NE cor. of Section 5, Block B-12, School Land. Same company's No. 2 T. G. Hendricks, T-88-O, 440 feet north and 330 feet west of the SE cor. of the NE of Section 28, Block 26, School Land. Same company's No. 1 T. G. Hendricks, T-88-Q, 440 feet north and 330 feet east of the SW cor. of the N half of Section 27, Block 26, School Land. Same company's No. 27 T. G. Hendricks, T-88-M, 330 feet south and 1,650 feet east of the NW cor. of Section 33, Block 26, School Land. Same company's No. 3-A Ida Hendricks, T-88-J, 2,360 feet north and 990 feet west of the SE cor. of Section 30, Block B-5, School Land. Same company's No. 7 T. G. Hendricks, T-88-T, 2,145 feet north and 2,310 feet west of the SE cor. of Section 34, Block 26, School Land.

**Young County**

A. W. Johnston's No. 1 J. D. Spencer, 1,050 feet south and 150 feet west of the NE cor. of Section 1,396, T.E.&L. Survey. F. W. Kennedy and others' No. 4 C. W. Johnson, 450 feet north and 750 feet west of the southeast corner of Lot 11, E. W. Sergeant Survey, A-253. Lynch & Whitehill's No. 1 C. W. Johnson, 450 feet south and 150 feet west of the northeast corner of the west 71 acres of the north 146 acres of the south 348 acres of the C. W. Johnson 1,026-acre tract out of the Ed W. Sergeant Survey, A-253. Magnolia Petroleum Co.'s No. 3 C. W. Johnson, 150 feet north and 1,350 feet east of the southwest corner of Lot 13, Edward W. Sergeant Survey, A-253. Petroleum Producers Co.'s No. 6 H. W. Hennig, 150 feet south and 450 feet east of the NW cor. of Section 410, T.E.&L. Survey. Same company's No. 1 J. R. Jackson, 890 feet north and 1,810 feet east of the southwest corner of the east half of Lot 18, Crawford Subdivision, I. Holman Survey, A-130. Same company's No. 1 L. Parrish-B, 150 feet north and 1,049 feet east of the SW cor. of Section 409, T.E.&L. Survey. Same company's No. 1 A. Weichman, 150 feet south and 1,232 feet east of the NW cor. of Section 173, T.E.&L. Survey. Ramming-Petty and others' No. 1 G. B. Hamilton, 150 feet north and west of the SE cor. of the SW of Section 1,394, T.E.&L. Survey. E. R. Riggs and others' No. 18 J. B. McKinley, 450 feet south and 750 feet east of the NW cor. of Section 1,489, T.E.&L. Survey. Stafford and others' No. 1 H. W. Drum, 450 feet north and 160 feet west of the southeast corner of the A. Wood Survey, A-1,274.

**Corrected Locations**

Brown County: Crown Petroleum Co.'s No. 1 J. A. Johnson, 450 feet southeast of the northwest line and 1,594 feet northeast of the southwest line of the J. A. Johnson 130-acre tract out of the John S. Thom Survey No. 53. Hammon & Garrett's No. 4 J. R. Lewis, 450 feet north and 450 feet east of the southwest corner of the north 37.5 acres of the west 75 acres of the north 150 acres of the J. R. Lewis tract out of the J. Kinney Survey No. 624. Clark-Buffalo Oil Co.'s No. 2 John Keesee, 300 feet

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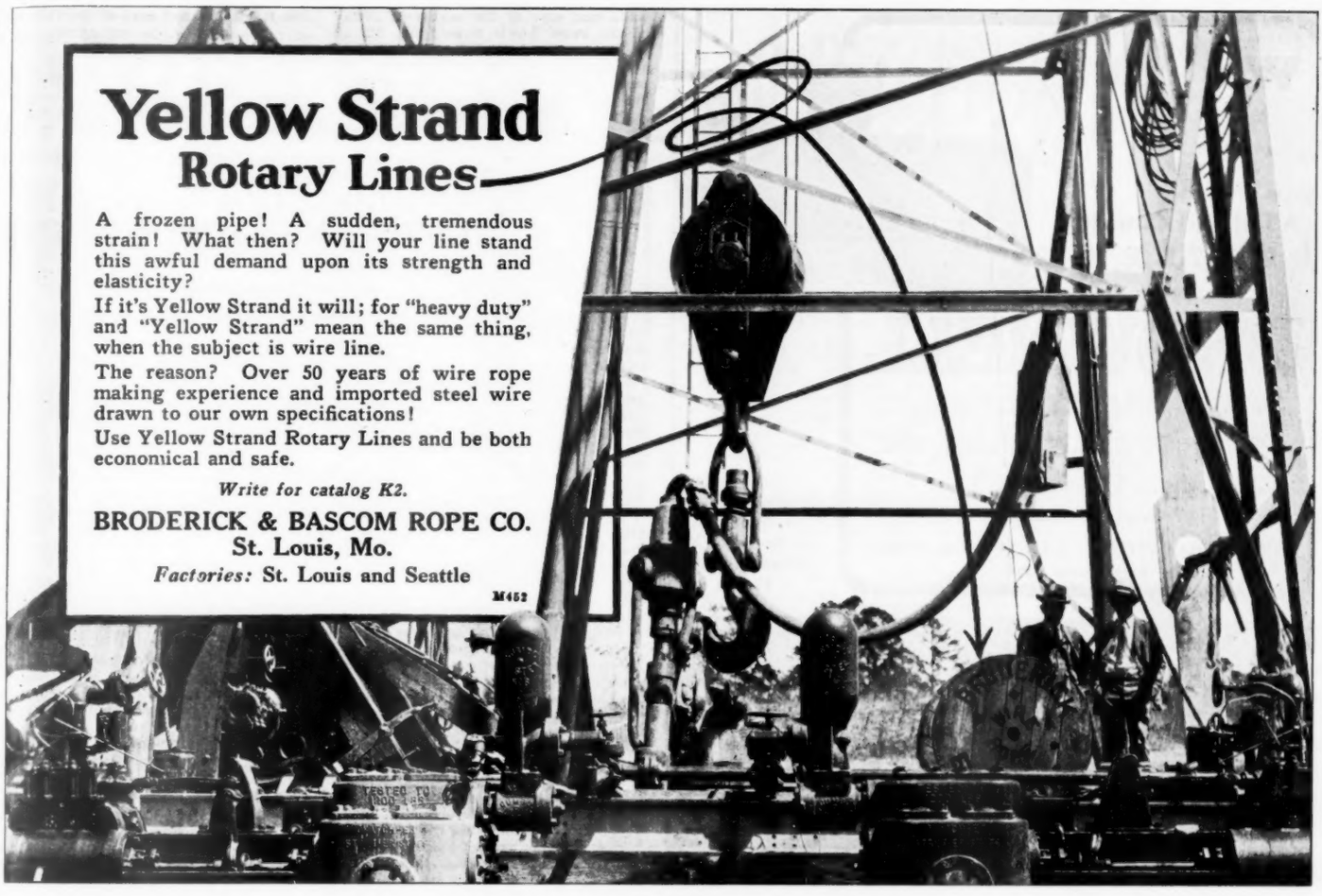
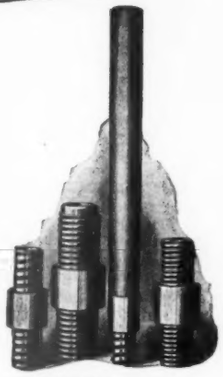
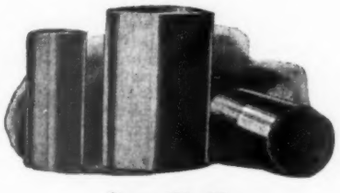
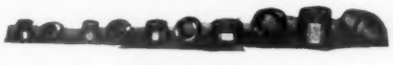




**Drill Rods and Couplings**



**Core Shells**



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south and east of the northwest corner of the Peter Lewis Survey No. 42. J. H. Green's No. 1 H. Hill, 150 feet north and 750 feet east of the southwest corner of the W. H. Hill 100-acre tract out of the A. C. Lovelace Survey, A-615.

Gray County: Danciger Oil & Refining Co. and others' No. 3 J. S. Morse, 330 feet south and east of the NW cor. of the S half of the SE of Section 2, Block 26, H.&G.N. Survey.

Winkler County: Pure Oil Co.'s No. 8 Grisham-Hunter-C, 990 feet north and 990 feet east of the SW cor. of the SE of Section 45, Block 26, School Land.

# OIL RECOVERY INVESTIGATIONS DISCUSSED BY JAMES O. LEWIS

By James O. Lewis
Petroleum Engineer, Tulsa

This paper[1], though termed a preliminary report, covers 130 experiments, which together with those of Power's constitute an exceedingly valuable contribution to petroleum engineering. These experiments were conducted in a larger apparatus with a finer sand than Power's but with oil of about the same quality. The purposes were somewhat different as they were directed toward finding the natural and repressured recoveries under different pressures and other conditions. The thorough and systematic manner in which the experiments were conducted leaves a feeling of confidence. If followed up, they should go a long way toward solving the obscure problems relating to the extraction of oil from the sands.

Of course there is the same question which applies to all laboratory experiments—whether the conditions are comparable to those in the field. For this reason the findings should be critically analyzed and the results compared with observational data from the field. To a large extent the value of this work as well as the value of the meritorious work of Power, whose paper is also being reviewed at this meeting, will depend upon the analysis and interpretation of the factual evidence obtained from the experiments. At the present stage of progress in petroleum engineering, there is more call for correct analysis and interpretation of the available data than there is of new data, as we have not assimilated the facts that are before us. Recent literature is full of cloudy thinking and of misleading generalizations from isolated facts. It has been like drawing a conclusion from a sentence isolated from its context.

### Comment on Conclusions

The experimental data and the conclusions reached are so completely and clearly set out by Mills and his co-workers that it is necessary to comment only on a few points. The reviewer is much interested in the results of these experiments as they appear to conform quite closely to opinions he had reached as the results of his own experience in the field and laboratory. Among them is that air will deplete an oil of its gasoline fractions in the same proportion as gas. This is important as it has generally been contended that gas will pick up gasoline vapors to a greater extent than air. Mills' experiments prove that at least under laboratory conditions this is not true and his findings are in accordance with the long-accepted physical law that all gases will carry the same percent of a vapor under like conditions.

The amount that oil swells when gas is absorbed under high pressure is a valuable fact as is also the selective absorption in oil of the different constituents of a gas. The authors do not report any evidence of important changes of the physical properties of the oil caused by chemical action of the gas. The thickening of the oil after putting on pressure is usually a temporary condition caused by former bad conditions in the well which are aggravated by the increased oil, gas and water resulting from repressuring.

The relation of the gas volume to oil production given in the laboratory data sheet is suggestive. It will be noted that the gas-oil ratio increases to a maximum in the early life of the well and then starts to decrease until it reaches a point as low as the point of beginning but afterwards rises to an excessively high ratio. The relation, however, is not at all like that which has been supposed by arguing that, as the pressure in the pool goes down, there is less energy in each cubic foot of gas and therefore it takes more cubic feet of gas to move a barrel of oil with consequently an increasing gas-oil ratio as the well gets older. What has been overlooked is that the greater energy at high pressure is used up largely in velocity. The meager field data which has come to the reviewer's attention has disclosed no regular relation of gas-oil ratios with declining pressure. The data show that sometimes the gas-oil ratio tends to increase and at other times that it decreases, but the changes in gas-oil ratio during the various stages of the life of the well are not as much as would be expected on the theory that more gas would be required because of less pressure. Whether this experimental relation is one that will be found general can hardly be said at this time. There should be more laboratory and field data analyzed.

### Questions Generalization

The experiments on ultimate recoveries show a maximum of 40 per cent at 800 pounds pressure and from this the authors conclude that "the natural recovery from oil sands may be somewhat higher than has been supposed by some engineers." The reviewer believes this is a generalization that should be questioned. It is a well-known fact that the Wilcox sand gives recoveries above the usual, doubtless due to the character of sand which is uniform and round, but still more important is the small scale on which the experiment was conducted. It is an axiom of mechanics that to move an object twice as far requires twice the force; therefore, to compare the final recovery from a tube of sand 5 feet long to the natural recovery where the oil has to be moved 50 times as far is manifestly not justifiable. Cutler has shown that recovery under otherwise like conditions approximately varies inversely as the distance between wells.

The reviewer objects to the authors' use of the term "by-passing." As previously used, the term by-passing refers to the air or gas passing through the member of the sand body offering least resistance. The tendency of the gas-oil ratio to increase in a uniform sand body as it is depleted should properly have another term which is "slippage." In the latter circumstance the gas mostly passes through the centers of the depleted pores leaving the oil clinging to the sand surfaces and in the angles of the pores. There is a very important practical distinction and it is desirable that the two terms be not confused.

The fact that the gas-oil ratio increases as the sand depletes is important in considering recovery problems. The reviewer found by his experiments that the ratio increased by hundreds and even thousands of times as the sand was depleted, when the same pressure was being maintained. This marks the inevitable economic limitation of recovery by gas pressure. The reviewer's experiments bear out those of the authors' except he noted no critical points.

### Effect of Oil on Air

The effect of the oil on the air is notable. The increase in $CO_2$ and 2 CO and the decrease in $O_2$ has often been noted, especially in the western fields. This

[1] "Oil Recovery Investigations of the Petroleum Experimental Station of the United States Bureau of Mines," by R. Van A. Mills, Joseph Chalmers and J. S. Desmond, before Petroleum Division, A.I.M.E., Tulsa, October, 1928, published in The Oil and Gas Journal, October 18.

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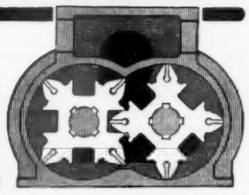

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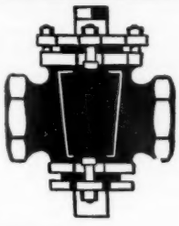

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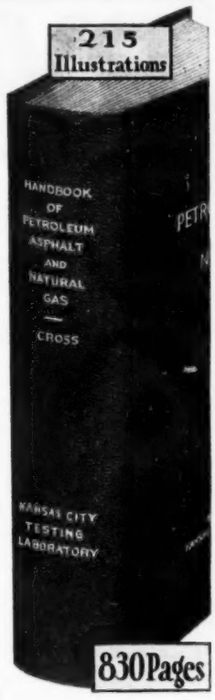


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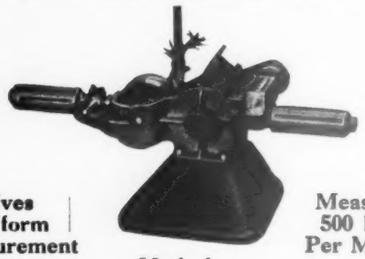

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fact, together with the results of Beecher, Parkhurst, Dow and Calkins' work which shows air to have a less favorable effect on viscosity than natural gas, have been used as arguments against the effectiveness of air as an expellant. but neither the authors' work nor Power's work supports this apprehension, nor does the reviewer know of any field evidence that does. Aside from incidental factors such as safety, air appears to be a better expellant than natural gas.

The experiments on the relative recoveries from repressuring at different stages of depletion are important. The results do not bear out the extreme concern taken by some engineers in recent discussions on conservation. The authors show a greater and more efficient recovery from late repressuring than from early repressuring.

This again illustrates the dangers from drawing conclusions from isolated facts. The fears that gas could not be gotten back into solution were based upon the slow diffusion of a gas under pressure into oil contained in a vessel, where there was no agitation. The influence of interferences between solids and liquids on solubility was overlooked. It is well known that rough surfaces promote the ebullition of a gas from solution. To a greater degree the extensive surface areas of the sand grains promote both absorption and ebullition of gases. The authors', Power's and the reviewer's experiments all show this. The effect of the sands surfaces in promoting absorption is similar to agitation.

However, the time factor in recovery is such that there is no doubt but what it is desirable to repressure early in the life of the field and this is coupled with other practical considerations which convinces the reviewer that undoubtedly early repressuring will be more profitable and will result in higher actual recovery than by letting the field go through the long stage of depletion before starting rejuvenation.

### Jamin Effect

The Bureau of Mines experiments give some data as to quantitative values of the Jamin effect. Under the conditions of experimentation, the final difference in pressure between the input and output ends of the flow tube should be the measure of the static resistance of the Jamin effect for the sand and oil used. The last figures on the laboratory data sheet show a differential pressure of .8 pound, but this is not the final differential pressure as both pressures were still declining and had not reached equilibrium. From personal communications the reviewer learns that in many other experiments carried on to longer periods the two gauges come almost or quite to the same pressure. The gauges used were not sensitive enough to measure very small differences but these experiments did show that the quantitative value of the Jamin effect was certainly very small and left valid doubt as to any proof of its existence under these conditions. That the Jamin effect exists in a linear series of pores there can be no doubt but these experiments put a question mark as to its existence, at least to an important extent, in a three dimensional system of pores.

In summarizing this paper the reviewer wishes to commend Mr. Mills and his associates on what he believes to be the best experimental work so far done on oil recovery. The technique worked for conducting such experiments is of especial importance. Unless experiments on oil recovery are carried on with a proper technique, widely misleading results may be obtained. Much experimental work is to be questioned because of faulty methods.

However, there is need of further analysis of the experimental facts. In plotting the relations between the facts presented, there are anomalies that need explanation. Evidently the experiments pass through critical conditions. These should be sought out and explained.

The reviewer also desires to call attention of the engineers at this meeting that these experiments do not support many of the extreme views that have recently been advanced on conservation.

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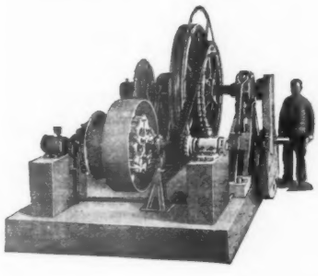

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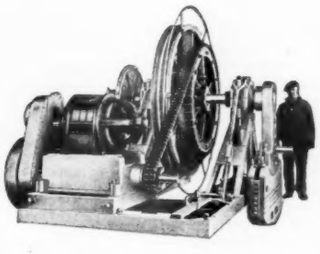

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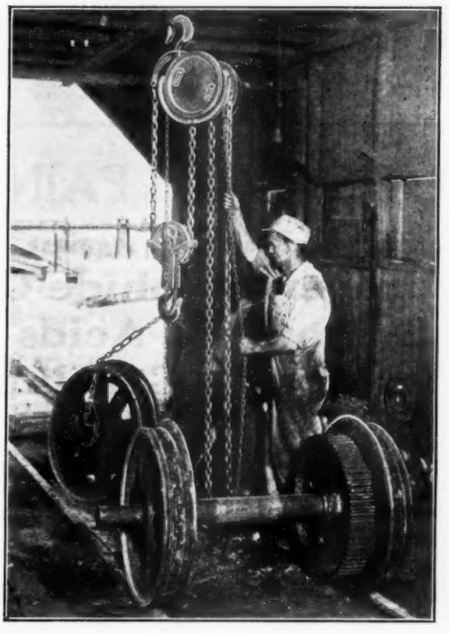

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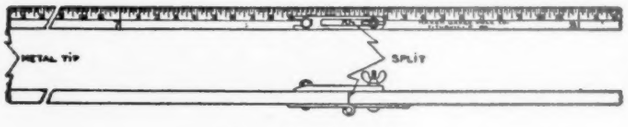


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## Seasonal Slowing Is Being Expected In Steel Industries

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 29. — The high point in steel buying has certainly been passed, but there is a question as to how long ago. There was heavy buying in September, including specifications against expiring contracts and strictly new buying. There was heavy buying in the early part of October, but reports were conflicting as to whether the rate then was above the September rate.

A definite tapering off in buying activity is now seen quite generally. Chicago reports lighter orders for its products, chiefly in connection with bars, shapes and plates, but insists that the early part of October witnessed the highest rate of the year, rather than any part of September. The sheet industry experienced a decrease in the buying of automobile sheets, but apparently no decrease in other classes of sheets taken as a whole. Buying of standard pipe has decreased farther, as a seasonal matter.

The Youngstown district had a slightly lower production of steel ingots last week than the preceding week, but finishing departments there naturally maintained their rate. From other sections there are no reports of decreasing steel production, but this would be expected to come.

An analysis made in some quarters is that within a couple weeks or so buyers of steel will begin thinking about January 1 inventories and will endeavor to limit their receipts of steel to what is absolutely necessary, and accordingly there should be a decrease in the rate of steel production. Since late in September production has been at about 90 per cent of capacity, measured in steel ingots, which compares with 76 per cent at the low point of the year, in June, and 91 per cent at the high point, in April.

September lettings of fabricated structural steel contracts are reported at 315,000 net tons, which means that for five successive months these lettings have run exceptionally heavy, so much so that the nine-month total is 12 per cent above that in the same period of last year. Lettings are now likely to fall off seasonally, also shipments.

Automobile production is on the verge of a considerable decrease, perfectly natural considering the time of year and the fact that production has been extremely heavy to date when in other years decreases began about September 1.

Production of automobiles and trucks in the United States and Canada is officially reported at 434,915 in September against 492,601 in August, but whether the business really decreased is a question. The Department of Commerce reports production as "factory sales." In September there was an extra Saturday, Sunday and holiday compared with August. That would decrease production, by there being about 10 per cent less working time, but it might give more actual selling time, hence it is injudicious to conclude either that there was actually much decrease or any increase. This month production is holding up well but there will be substantial decreases in November and December.

In the annual rail buying movement about 400,000 tons of rails have now been placed, and the roads involved have taken say 10 per cent less than those particular roads took a year ago. There has been some prompt buying in addition to these annual purchases. The total movement will run over 1,500,000 tons, to be completed in December or January.

Buying of standard or merchant pipe has undergone a further and more marked decrease in the past week, this being more or less seasonal. Demand for casing and other well material keeps up its moderate rate. Some of the line pipe orders on mill books are nearing completion, but some are expected to last through the year. Nothing definite is known as to when an order may be expected in connection with the recent project to pipe


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A tendency of the discharge pressure to rise overbalances the weight on the lever and the valve moves toward its seat, throttling the suction sufficiently to restore and maintain the discharge pressure at a fixed point.

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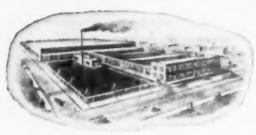
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General Offices—Pittsburgh, Pa.

**See Classified Wants on Pages 116-117**

natural gas from Ventura, Calif., to San Francisco. It is said the line would involve about 240 miles of 18 and 20-inch pipe.

Pipe mills continue operating at an average around 70 per cent, while tube mills are well above that rate.

## DENTON AGAIN LEADS OKLA.-KANSAS DIVISION

All officers of the Mid-Continent Oil & Gas Association, Kansas-Oklahoma division, were re-elected at the annual meeting in Tulsa on Wednesday, October 24, and the executive committee for 1929 was chosen

Following is the list of officers and the executive committee for 1929:

Officers—J. C. Denton, president; C. C. Herndon, first vice president; A. M. Landon, vice president for Kansas; Wirt Franklin, vice president for southern Oklahoma; John H. Kane, vice president for northern Oklahoma, and Harry H. Smith, secretary-treasurer.

**Executive Committee**

G. D. Almen, Winona Oil Co.; Guy Berry, Big Brothers Oil Co.; Burdette Blue, Indian Territory Illuminating Oil Co.; George S. Bole; J. H. Boyle, Chestnut & Smith; Robert H. Bradford; John H. Brennan, Victor Gasoline Co.; Frank Buttram, Buttram Petroleum Co.

Louis Campbell, Magnolia Petroleum Co.; H. H. Champlin, Champlin Refining Co.; C. C. Brown, Marland Oil Co.; Alvin Richards, Pure Oil Co.; Burt H. Collins, Echo Oil Co.; Fred Cook, Prairie Oil & Gas Co.; James K. Crawford, Quartet Oil Co.

William N. Davis, Phillips Petroleum Co.; J. C. Denton, Mid-Continent Petroleum Corp.; A. L. Derby, Derby Oil Co.; George A. Dye, H. F. Wilcox Oil & Gas Co.

T. T. Eason, Healdton Oil & Gas Co.; W. W. Fleming, Mid-Kansas Oil & Gas Co.; W. C. Franklin, Tidal Oil Co.; Wirt Franklin, Wirt Franklin Pet. Corp.; C. L. Freeland, Southwestern Dev. Co.

E. J. Gorman, Twin State Oil Co.; John L. Gray, Shaffer Oil & Refining Co.; R. A. Griffith, Sinclair Oil & Gas Co.; Charles W. Grimes; H. B. Gutelius, Continental Supply Co.; C. C. Harmon; C. C. Herndon, Skelly Oil Co.; J. H. Hill, The Texas Company; F. B. Howland, Kewanee Oil & Gas Co.; J. A. Hull, J. A. Hull Co.; P. J. Hurley, Reserve Petroleum Co.

R. R. Irwin, White Eagle Oil & Refining Co.; L. B. Jackson; E. P. Jones; R. C. Jones, Blackwell Oil & Gas Co.; R. E. Josey, Josey Oil Co.

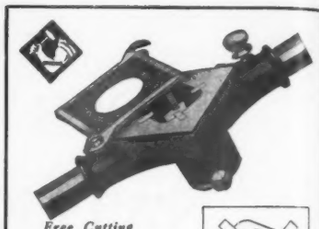
John H. Kane, Phillips Petroleum Co.; Dana H. Kelsey, Prairie Oil & Gas Co.; W. L. Kistler, Kistler Oil & Gas Co.

A. M. Landon; E. B. Lawson; A. M. Blow, Amerada Petroleum Corp.

Pat Malloy, Malloy & Co.; J. H. Markham, Jr.; E. W. Marland, Marland Companies; D. B. Mason; J. W. McCulloch, McCulloch Oil Co.; Henry McGraw, Gypsy Oil Co.; Harry H. Rogers, Exchange National Bank; C. L. McMahon; D. F. McMahon; J. B. Milham; P. M. Miskell, Empire Companies; E. H. Moore, Independent Oil & Gas Co.

Charles F. Noble; S. E. Wolff, Oklahoma Power & Light Co.; Clyde Pape, Selby Oil & Gas Co.; F. B. Parriott, Transcontinental Oil Co.; C. B. Peters, Peters Petroleum Co.; Waite Phillips; F. A. Pielsticker, Skelly Oil Co.

W. R. Ramsey; E. B. Reeser, Barnsdall Oil Co.; James A. Green, Roxana Petroleum Corp.; Frank Long, Oklahoma Natural Gas Corp.; R. C. Sharp; J. J. Shea; W. G. Skelly, Skelly Oil Co.; T. B. Slick; J. W. Sloan, International Supply Co.; Harry H. Smith, Mid-Continent Oil & Gas Association; R. H. Smith; George Snedden, Interocean Oil Co.; H. R. Straight, Empire Companies; C. W. Titus; James A. Veasey, Carter Oil Co.; J. A. Vickers, Vickers Petroleum Co.; P. G. Walker, Jr.; L. H. Wentz; Max Westheimer, Westheimer & Daube; W. E. Wood; C. J. Wrightsman, Wrightsman Oil Co.; J. T. King, Kingwood Oil Co.; J. E. Crosbie; E. R. Perry, Superior Oil Co.; John A. Fryer, Cardinal Oil Co.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THE LINE OF LEAST RESISTANCE
**STRAIGHT-HOLE**
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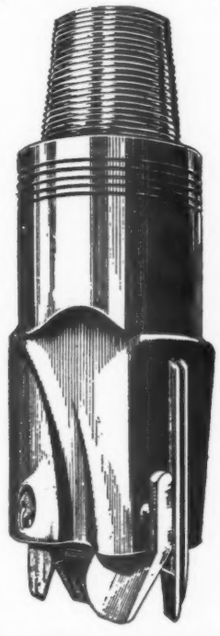
—made this speed and low cost record. A 1000 feet of 11″ hole in 40 hours, passing another well by 100 feet that was started 5 days previously, is the record made by the Klingensmith Drilling Company at Pearson Switch, Okla., with three sets of K-P self-sharpening cutters in a K-P *Straight-Hole* Bit. *This thousand feet cost Klingensmith only $30.00 for K-P self-sharpening cutters.* The total footage was made in three round trips.



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## EQUAL REPRESENTATION IN HEATING INSTITUTE

At its quarterly meeting, in Detroit, the board of directors of the American Oil Burner Association voted to give oil companies equal representation with oil heating equipment manufacturers on the board of counsellors of Oil Heating Institute.

This announcement, like a number of others which have come out of the petroleum industry within recent months, points to the growing importance to oil companies of the oil burner fuel market, and the desire of oil heating equipment manufacturers to co-operate with oil companies. The Oil Heating Institute, which is a research and information headquarters for the principal manufacturers of oil burners in the country, now comes under the joint supervision of the oil and oil burner industries.

Under the new division of representation, the board of counsellors of the institute will consist of seven representatives of the oil burner manufacturers and seven of the oil companies. Heretofore the latter group has had only three representatives on the board. Appointment of the four new members has not yet been made, but an announcement is expected within a short time.

At the Detroit meeting of the directors, manufacturers of the oil heating equipment also pledged their co-operation with the United States Bureau of census in issuing a monthly manufacturer's census of shipments, production and stocks—a regular service similar to the present compiling and publishing of total oil production figures for the oil industry by the Bureau of Mines.

## DRILLING AND OUTPUT IN MEXICO REDUCED

MEXICO CITY, Mex., Oct. 26.—(By Trens Agency) — The Petroleum Bureau of the Department of Industry, Commerce and Labor announces that a continuation of reduced drilling in Mexican fields can be expected during the remainder of the present year. Floods and heavy rains throughout the fields will also result in reduced production from existing wells.

At the same time, the department states that important drilling is now being planned in accord with the general policy of the companies following a readjustment of the petroleum supply in the United States.

Nineteen drilling permits were issued by the Petroleum Bureau during the week ending October 20. The permits follow:

Aurea Hernandez G. de Ibarguen: Aurea 1, Lot 12 of Potrero de Isleta and Lot 34, Mahauves Oriental, Panuco, Vera Cruz.

El Aguila: Filisola 73, Filisola, Minatitlan, Vera Cruz; Santa Rosa 2, Gavilan Norte, Puerto Mexico, Vera Cruz; Tonala 6, Gavilan Norte, Puerto Mexico, Vera Cruz.

Gulf Coast Corp.: Cacalilao 262 and 264, Lot 2, Cacalilao, Panuco, Vera Cruz.

Penn Mex Fuel Co.: Jardin 29, El Jardin, Temapache, Vera Cruz.

El Sol: Salvason 4-A, Federal Zone, right bank Panuco River, Salvasuchi, Vera Cruz.

Mexican Gulf Oil Co.: Zuniga 13, Buena Vista, Panuco, Vera Cruz.

Kern Mex Oil Fields: Salinas 76, Lot 17, Salinas tract, Panuco, Vera Cruz.

Southern Fuel & Refining Co.: Cacalilao 261, Lot 2 Cacalilao, Panuco, Vera Cruz.

## MAP OF ROCKY MOUNTAIN AREA

A new map of the Rocky Mountain area, embracing Wyoming, New Mexico, Colorado, Utah and Montana, is being put out by C. D. Johnson, geologist of Denver. It is made on a scale of 12 miles to the inch and shows the oil and gas fields, anticlinal axes, wildcat drilling wells, dry holes and abandoned wells with depths, oil gas and gasoline pipe lines.

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The Oil and Gas Journal
Classified Wants Department

# Oklahoma-Kansas and Eastern Pipe Line Report

### OKLAHOMA-KANSAS
**Pipe Line Statement for August, 1928**

**Runs**

| Company— | Month (bbls.) | Dy. av. (bbls.) |
|---|---|---|
| Prairie P. L. Co.* | 4,402,000 | 142,000 |
| Gulf P. L. Co. | 1,584,975 | 51,128 |
| Texas P. L. Co. | 742,717 | 23,959 |
| Magnolia P. L. Co. | 2,039,257 | 65,782 |
| Empire P. L. Co. | 965,660 | 31,150 |
| Cosden P. L. Co. | 1,040,217 | 33,555 |
| Sinclair P. L. Co. | 3,850,665 | 124,215 |
| Oklahoma P. L. Co. | 3,413,315 | 110,107 |
| Other lines* | 5,301,000 | 171,000 |
| Total August | 23,339,806 | 752,887 |
| Total July | 22,004,040 | 709,808 |
| Difference | 1,335,766 | 43,079 |

**Shipments**

| Company— | Month (Bbls.) | Dy. av. (Bbls.) |
|---|---|---|
| Prairie P. L. Co.† | 6,021,445 | 194,240 |
| Gulf P. L. Co. | 1,445,867 | 46,641 |
| Texas P. L. Co. | 1,059,583 | 34,180 |
| Magnolia Pet. Co. | 1,988,410 | 64,142 |
| Empire P. L. Co. | 1,129,915 | 36,449 |
| Cosden P. L. Co. | 887,163 | 28,618 |
| Sinclair P. L. Co.† | 3,138,204 | 101,232 |
| Oklahoma P .L. Co. | 3,342,764 | 107,831 |
| Other lines | 5,859,000 | 189,000 |
| Total August | 24,872,351 | 802,333 |
| Total July | 24,599,922 | 793,926 |
| Difference | 272,429 | 8,407 |

**Stocks**

| | |
|---|---|
| Prairie O. & G. Co.* | 31,355,000 |
| Prairie P. L. Co.* | 2,250,000 |
| Gulf P. L. and Gypsy Oil Co. | 10,169,509 |
| The Texas Company | 6,863,615 |
| Magnolia Pet. Co. | 8,778,770 |
| Empire P. L. Co. | 3,654,319 |
| Mid-Continent Pet. Corp. | 3,414,041 |
| Sinclair Crude Oil Pur. Co. | 19,800,000 |
| Carter Oil Co. | 12,320,994 |
| Oklahoma P. L. Co. | 2,887,081 |
| Other lines* | 11,275,000 |
| Total August | 112,768,329 |
| Total July | 113,149,369 |
| Difference | 381,040 |

*Estimated. †Prairie Pipe Line shipments include Texas crude oil, and Sinclair shipments include Texas and Wyoming crude oil.

Note—Stocks do not include approximately 8,000,000 bbls. of crude oil held in storage on private tank farms and leases and approximately 450,000 bbls. of Texas Panhandle crude oil in storage in Oklahoma.

### EASTERN PIPE LINE REPORT

**Runs From Wells**

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

| | Aug., '28 | Sept., '28 |
|---|---|---|
| National Transit | 170,904.52 | 157,168.79 |
| S. W. Pa. P. L. | 91,112.38 | 81,070.62 |
| Eureka P. L. | 381,023.25 | 345,505.60 |
| Buckeye P. L. (Macksburg) | 367,692.66 | 321,117.10 |
| Buckeye P. L. (Cleve) | 11,928.55 | 11,281.62 |
| Buckeye P. L. (Lima, etc.) | 120,600.29 | 108,830.90 |
| Indiana P. L. | 7,013.10 | 6,387.52 |
| Cumberland P. L. | 233,338.19 | 193,343.46 |
| N. Y. Transit | 25,007.11 | 23,100.70 |
| Tidewater P. L. | 220,230.22 | 204,507.93 |
| Pure Oil | 65,261.50 | 59,111.90 |
| Emery P. L. | 61,506.60 | 57,782.02 |
| Paragon Dev. | 34,022.80 | 26,168.86 |
| Stoll Oil. Ref. | 10,447.17 | 9,243.26 |
| Total | 1,790,088.34 | 1,604,620.28 |
| Daily average | 57,744.78 | 53,487.34 |

Note—Indian Refining Co. also reported other receipts of 357,570.08 bbls. Paragon Refining Co. had other receipts of 183,883.-44 bbls. Paragon Development had other receipts of 719.21 bbls.

**Petroleum Deliveries**

The following tables exhibit the shipments of regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky at the close of August and September:

| | Aug., '28 | Sept., '28 |
|---|---|---|
| National Transit | 572,070.14 | 532,771.70 |
| S. W. P. P. L. | 462,872.37 | 481,986.45 |
| Eureka P. L. | 224,817.97 | 213,103.59 |
| Buckeye P. L. (Macksburg) | 148,487.46 | 142,859.81 |
| Buckeye P. L. (Cleve) | 2,673.05 | 1,697.10 |
| Buckeye P. L. (Lima, etc.) | 1,512,473.28 | 1,399,448.58 |
| Indiana P. L. | 1,426,376.89 | 1,379,998.87 |
| Cumberland P. L. | 181,480.36 | 297,672.12 |
| N. Y. Transit | 213,009.28 | 240,697.91 |
| Northern P. L. | 316,097.83 | 301,912.35 |
| Tidewater P. L. | 177,158.38 | 124,606.05 |
| Pure Oil | 62,891.44 | 62,090.54 |
| Emery P. L. | 56,960.09 | 61,266.58 |
| Paragon Ref. | 189,693.84 | 190,716.50 |
| Indian Ref. | 393,569.13 | 366,303.28 |
| Paragon Dev. | 37,817.61 | 27,004.95 |
| Total | 5,978,449.12 | 5,824,136.38 |
| Daily average | 192,853.19 | 194,137.88 |

**Gross Stocks**

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana for August and September:

| | Aug., '28 | Sept., '28 |
|---|---|---|
| National Transit | 1,135,875.48 | 1,034,508.62 |
| S. W. Pa. P. L. | 713,493.58 | 607,019.77 |
| Eureka P. L. | 1,102,757.62 | 1,144,172.16 |
| Buckeye P. L. (Macksburg) | 540,894.00 | 507,516.69 |
| Buckeye P. L. (Cleve) | 46,048.37 | 42,976.72 |
| Buckeye P. L. (Lima, etc.) | 3,717,960.51 | 3,600,695.49 |
| Indiana P. L. | 598,136.05 | 602,500.63 |
| Cumberland P. L. | 632,613.31 | 511,311.43 |
| Southern P. L. | 410,757.10 | 414,022.54 |
| N. Y. Transit | 706,799.19 | 612,289.36 |
| Northern P. L. | 458,296.62 | 424,456.32 |
| Pure Oil | 63,850.93 | 64,141.86 |
| Emery P. L. | 8,656.13 | 9,373.75 |
| Paragon Ref. | 23,167.67 | 16,042.95 |
| Indian Ref. | 69,892.18 | 61,936.95 |
| Paragon Dev. | 7,544.29 | 7,944.96 |
| Total | 10,236,743.03 | 9,660,910.34 |
| Decrease | 582,587.91 | 575,832.69 |

**Grades of Oil**

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of August and September showing the gross stocks of the above fields:

| | Aug., '28 | Sept., '28 |
|---|---|---|
| Pennsylvania | 3,368,647.01 | 3,227,574.96 |
| Lima | 965,466.57 | 969,628.64 |
| Kentucky | 993,362.71 | 831,752.66 |
| Mid-Continent | 4,857,572.08 | 4,560,201.79 |
| Illinois | 51,694.66 | 71,752.30 |
| Total | 10,236,743.03 | 9,660,910.34 |

**Daily Average Runs**

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

| | 1925 | 1926 | 1927 | 1928 |
|---|---|---|---|---|
| Jan. | 56,831 | 55,630 | 56,209 | 52,904 |
| Feb. | 60,606 | 60,394 | 61,298 | 57,002 |
| Mar. | 60,575 | 61,644 | 63,247 | 57,485 |
| April | 63,062 | 63,019 | 60,337 | 56,812 |
| May | 59,217 | 60,580 | 60,284 | 62,067 |
| June | 61,270 | 61,131 | 62,757 | 58,220 |
| July | 62,639 | 63,206 | 58,874 | 57,144 |
| Aug. | 59,686 | 61,815 | 60,870 | 57,745 |
| Sept. | 62,510 | 64,639 | 60,285 | 53,487 |
| Oct. | 145,388 | 161,132 | 147,036 | ..... |
| Nov. | 59,350 | 61,774 | 57,275 | ..... |
| Dec. | 57,974 | 58,755 | 53,089 | ..... |

**Daily Average Shipments**

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

| | 1925 | 1926 | 1927 | 1928 |
|---|---|---|---|---|
| Jan. | 157,889 | 156,056 | 141,227 | 146,465 |
| Feb. | 160,863 | 159,488 | 138,534 | 167,368 |
| Mar. | 154,591 | 150,239 | 133,777 | 159,883 |
| April | 161,429 | 152,371 | 140,227 | 172,935 |
| May | 146,995 | 160,998 | 144,594 | 180,559 |
| June | 149,467 | 160,257 | 149,772 | 188,034 |
| July | 161,338 | 160,045 | 151,850 | 189,470 |
| Aug. | 161,730 | 151,929 | 188,653 | 192,853 |
| Sept. | 156,719 | 158,915 | 144,213 | 194,138 |
| Oct. | 145,388 | 161,132 | 147,036 | ..... |
| Nov. | 143,582 | 152,608 | 150,975 | ..... |
| Dec. | 150,162 | 136,428 | 144,504 | ..... |

**Gross Stocks**

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

| | 1926 | 1927 | 1928 |
|---|---|---|---|
| Jan. | 9,859,170 | 9,718,008 | 12,276,718 |
| Feb. | 9,579,354 | 10,119,162 | 12,180,418 |
| Mar. | 9,438,292 | 10,794,044 | 12,239,725 |
| April | 9,806,851 | 11,112,295 | 11,740,126 |
| May | 9,531,757 | 11,359,381 | 11,602,468 |
| June | 9,585,904 | 11,493,673 | 11,287,673 |
| July | 9,734,687 | 11,458,128 | 10,819,331 |
| Aug. | 9,058,947 | 11,989,115 | 10,236,743 |
| Sept. | 9,436,732 | 12,212,716 | 9,660,910 |
| Oct. | 9,269,805 | 12,047,661 | ..... |
| Nov. | 9,257,067 | 11,939,740 | ..... |
| Dec. | 9,454,512 | 12,340,297 | ..... |

**Franklin Pipe Line Co.**

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

| 1927 | Runs | Shipments | Stocks |
|---|---|---|---|
| Sept. | 3,309.56 | 2,656.48 | 19,372.25 |
| Oct. | 2,801.33 | 1,226.99 | 20,946.58 |
| Nov. | 2,746.50 | 2,220.53 | 31,472.55 |
| Dec. | 2,779.86 | 1,893.69 | 23,358.72 |
| 1928— | | | |
| Jan. | 1,886.06 | 2,424.79 | 21,819.99 |
| Feb. | 2,460.14 | 3,109.34 | 21,170.79 |
| March | 2,578.86 | 3,540.33 | 20,209.32 |
| June | 3,153.08 | 2,779.02 | 17,922.58 |
| July | 2,902.50 | 3,628.02 | 17,197.06 |
| Aug. | 2,874.11 | 2,350.13 | 17,721.04 |
| Sept. | 2,820.31 | 5,255.42 | 15,285.93 |

**The Illinois Field**

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

| | |
|---|---|
| Gross stocks, Oct. 1 | 2,085,377.67 |
| Runs from wells | 542,420.55 |
| Other receipts | 405,258.98 |
| Regular deliveries | 654,033.74 |
| Other deliveries | 383,379.16 |

The amount of Illinois oil run by the Tidewater Pipe Co. in September was 24,-887.36 bbls. Deliveries were 83,259.76 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

| 1927— | Runs | Deliveries |
|---|---|---|
| September | 619,580.49 | 433,212.49 |
| October | 601,099.25 | 408,287.58 |
| November | 605,621.14 | 415,185.06 |
| December | 577,321.25 | 397,176.07 |
| 1928— | | |
| January | 561,759.57 | 434,147.02 |
| February | 573,619.78 | 450,317.81 |
| March | 725,250.82 | 520,595.69 |
| April | 526,013.13 | 448,332.44 |
| May | 632,968.64 | 522,980.51 |
| June | 608,552.49 | 625,087.33 |
| July | 612,286.49 | 565,678.37 |
| August | 639,074.85 | 671,864.03 |
| September | 570,307.91 | 737,293.50 |

Tidewater Pipe Co., Ltd., also delivered in September, 261,905.21 bbls. Oklahoma oil.

## AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

| Average bbls. per day— | Atlantic Ports: Baltimore | Boston | New York | Philadelphia | Others | Total | Gulf Coast Ports: Galveston | New Orleans Baton Rouge | Port Arthur Sabine Pass | Tampa | Total | Total all ports |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| April | 9,033 | 9,167 | 24,133 | 18,167 | 7,867 | 66,367 | ..... | ..... | ..... | ..... | ..... | 66,367 |
| May | 19,355 | 5,387 | 19,581 | 16,419 | 4,774 | 65,516 | ..... | ..... | ..... | ..... | ..... | 65,516 |
| June | 11,800 | ..... | 23,367 | 19,700 | 9,000 | 63,867 | ..... | ..... | ..... | ..... | ..... | 63,867 |
| July | 19,807 | 2,903 | 8,774 | 20,419 | 2,452 | 54,355 | ..... | ..... | ..... | ..... | ..... | 54,355 |
| August | 18,161 | 3,613 | 27,774 | 17,677 | 2,419 | 69,645 | ..... | ..... | ..... | 806 | 806 | 70,451 |
| September | 11,100 | ..... | 18,967 | 38,200 | 6,700 | 74,967 | ..... | ..... | ..... | ..... | ..... | 74,967 |

## AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

| Average bbls. per day— | Atlantic Ports: Baltimore | Boston | New York | Philadelphia | Others | Total | Gulf Coast Ports: Galveston | New Orleans Baton Rouge | Port Arthur Sabine Pass | Tampa | Total | Total all ports |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| April | 18,267 | 5,800 | 124,133 | 33,200 | 36,067 | 217,467 | 9,333 | 23,467 | 2,167 | 133 | 35,100 | 252,567 |
| May | 28,000 | 7,033 | 107,484 | 32,129 | 21,936 | 196,581 | 3,871 | 24,032 | ..... | 1,904 | 29,807 | 226,381 |
| June | 24,900 | 12,233 | 119,867 | 41,667 | 19,300 | 217,967 | 1,833 | 15,567 | 2,167 | ..... | 19,567 | 237,534 |
| July | 23,484 | 14,548 | 111,903 | 37,678 | 21,452 | 209,065 | 9,355 | 25,000 | ..... | 774 | 35,129 | 244,194 |
| August | 25,290 | 16,323 | 123,226 | 21,613 | 7,194 | 193,645 | ..... | 38,677 | ..... | 613 | 39,290 | 232,935 |
| September | 22,933 | 19,100 | 110,467 | 30,700 | 14,333 | 197,533 | 6,367 | 41,300 | 6,333 | 1,667 | 55,667 | 253,200 |

## GROSS PRODUCTION IN UNITED STATES FOR 12 MONTHS

(In barrels of 42 gallons)

| | | California | Oklahoma | Texas | Kansas | Arkansas | Louisiana | Rocky Mountains | Eastern Fields | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| September: | Month | 19,064,500 | 24,111,660 | 18,322,800 | 3,341,340 | 3,032,970 | 2,027,070 | 2,268,630 | 3,465,000 | 75,633,970 |
| | Daily average | 635,483 | 803,722 | 610,760 | 111,378 | 101,099 | 67,569 | 75,621 | 115,774 | 2,521,137 |
| October: | Month | 19,448,833 | 24,247,053 | 19,200,098 | 3,509,169 | 3,117,298 | 2,058,889 | 2,268,885 | 3,400,000 | 77,240,225 |
| | Daily average | 627,384 | 782,163 | 619,358 | 113,199 | 100,555 | 66,416 | 72,867 | 109,677 | 2,491,622 |
| November: | Month | 18,516,467 | 23,083,380 | 18,628,290 | 3,313,650 | 2,906,760 | 1,956,960 | 2,234,730 | 3,303,500 | 73,942,737 |
| | Daily average | 617,216 | 769,446 | 620,943 | 110,455 | 98,892 | 65,232 | 74,491 | 110,083 | 2,464,758 |
| December: | Month | 19,338,823 | 22,208,417 | 19,840,009 | 3,427,174 | 2,962,750 | 1,927,148 | 2,400,578 | 3,219,900 | 74,924,799 |
| | Daily average | 610,930 | 716,400 | 640,000 | 110,554 | 95,576 | 62,166 | 77,428 | 103,868 | 2,416,924 |
| January: | Month | 19,028,228 | 20,978,320 | 20,024,981 | 3,319,326 | 2,791,922 | 1,805,015 | 2,429,375 | 3,132,000 | 73,510,166 |
| | Daily average | 613,814 | 676,720 | 645,967 | 107,075 | 90,061 | 58,226 | 78,367 | 101,064 | 2,371,296 |
| February: | Month | 18,038,459 | 19,294,426 | 19,645,488 | 3,079,887 | 2,571,575 | 1,759,606 | 2,220,887 | 3,166,000 | 69,786,328 |
| | Daily average | 622,016 | 665,324 | 677,431 | 106,203 | 88,675 | 60,676 | 76,927 | 109,173 | 2,406,425 |
| March: | Month | 19,118,320 | 20,162,524 | 21,466,632 | 3,379,031 | 2,687,948 | 1,871,158 | 2,401,911 | 3,522,000 | 74,609,524 |
| | Daily average | 616,720 | 650,404 | 692,472 | 109,001 | 86,708 | 60,360 | 77,481 | 113,613 | 2,406,759 |
| April: | Month | 18,280,729 | 19,096,920 | 21,845,428 | 3,412,260 | 2,472,600 | 1,915,020 | 2,370,810 | 3,231,000 | 72,624,767 |
| | Daily average | 609,357 | 636,564 | 728,180 | 113,742 | 82,420 | 63,835 | 79,027 | 107,700 | 2,420,826 |
| May: | Month | 19,331,866 | 19,443,356 | 21,191,561 | 3,367,809 | 2,843,847 | 1,926,036 | 2,525,043 | 3,619,000 | 74,248,517 |
| | Daily average | 623,609 | 627,205 | 683,599 | 108,639 | 91,737 | 62,130 | 81,453 | 116,742 | 2,395,113 |
| June: | Month | 19,164,244 | 18,482,981 | 19,802,520 | 3,202,050 | 3,075,911 | 2,112,149 | 2,425,470 | 3,394,000 | 71,659,325 |
| | Daily average | 638,808 | 616,099 | 660,084 | 106,735 | 102,530 | 70,405 | 80,849 | 113,133 | 2,388,644 |
| July: | Month | 19,754,458 | 18,809,498 | 22,155,335 | 3,171,648 | 2,792,139 | 2,237,738 | 2,492,586 | 3,472,000 | 74,885,302 |
| | Daily average | 637,241 | 606,758 | 714,688 | 102,308 | 90,069 | 72,185 | 80,406 | 112,000 | 2,415,655 |
| August: | Month | 19,444,849 | 20,840,494 | 22,201,257 | 3,147,058 | 2,711,787 | 2,221,677 | 2,561,840 | 3,571,200 | 76,700,212 |
| | Daily average | 627,255 | 672,274 | 716,170 | 101,518 | 87,477 | 71,667 | 82,640 | 115,200 | 2,474,200 |
| | Total 12 months | 228,129,886 | 250,759,028 | 244,324,399 | 39,670,301 | 33,967,507 | 23,818,468 | 28,600,745 | 40,495,600 | 889,765,034 |
| | Daily average | 623,306 | 685,134 | 667,553 | 108,389 | 92,807 | 65,078 | 78,144 | 110,644 | 2,431,079 |

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